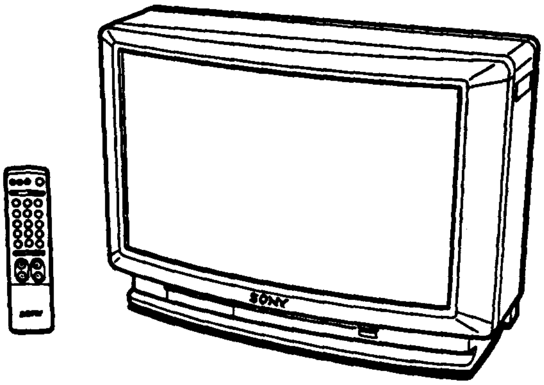
KV-W32SN11

RM-850

SERVICE MANUAL

Australian Model

Chassis No. SCC-H90 A-A



AG-1 CHASSIS

MODELS OF THE SAME SERIES	
KV-W32SN11	
KV-W28MH11/W28MN11	
KV-W32MH11/W32MH11	

SPECIFICATIONS

Power requirements	110–240 V AC, 50/60 Hz
Power consumption	240 W
Television system	B/G, I, D/K, M
Color system	PAL, PAL 60, SECAM, NTSC4.43, NTSC3.58
Stereo system	NICAM Stereo B/G, I ; A2 (German) stereo B/G
Channel coverage	See "Channel coverage" at the bottom.
Antenna	75-ohm external antenna terminal for VHF/UHF
Audio output (speaker)	15 W × 2

Number of terminal	
Video	Input: 4, Output: 1
Audio	Input: 4, Output:1
S1 Video/S Video	Input: 4, Output: 1 Y: 1 Vp-p, 75 ohms, unbalanced, sync negative, C: 0.286 Vp-p, 75 ohms
Picture tube	HD Trinitron
Tube size (measured diagonally)	32 inches
Screen size (measured diagonally)	76 cm
Dimensions (w/h/d)	905 × 600 × 584 mm
Mass	73 kg

MICROFILM

TRINITRON® COLOR TV

SONY®

Accessories

Supplied	Remote commander (1) Size R6 (AA) battery (1)
Optional	TV stand SU-W32

Design and specifications are subject to change without notice.

Channel coverage

AUSTRALIA

Receivable channel	Channel display
Australia	
AS-0 to AS-12	C00 to C12
AS-5A, AS-9A	C13, C14
AS-28 to AS-69	C28 to C69
New Zealand	
1	C00
2 to 3	C01 to C02
4 to 7	C06 to C09
8	C14
9 to 11	C10 to C12

CAUTION

SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR CARBON PAINTED ON THE CRT, AFTER REMOVING THE ANODE.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

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SECTION 1
GENERAL

The operating instructions mentioned here are partial abstracts from the Operating Instruction Manual. The page numbers of the Operating Instruction Manual remein as in the manual.

WARNING

To prevent fire or shock hazard, do not expose the TV to rain or moisture.
Dangerously high voltages are present inside the TV. Do not open the cabinet. Refer servicing to qualified personnel only.

For general safety:

- Do not expose the TV to rain or moisture.
- Do not open the rear cover.

For safe installation:

- Do not block the ventilation openings.
- Do not install the TV in hot, humid or excessively dusty places.
- Do not install the TV where it may be exposed to mechanical vibrations.

For safe operations:

- Do not operate the TV on anything but 110–240 V AC.
- Do not operate the TV if any liquid or solid object falls in it—have it checked immediately.
- Do not keep the TV plugged in if you are not going to use it for several days.
- Do not pull the power cord to disconnect the TV. Pull it out by the plug.

Caution

Avoid touching the screen surface and take care not to scratch it with hard objects.

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Getting Started

6 Introducing the menu
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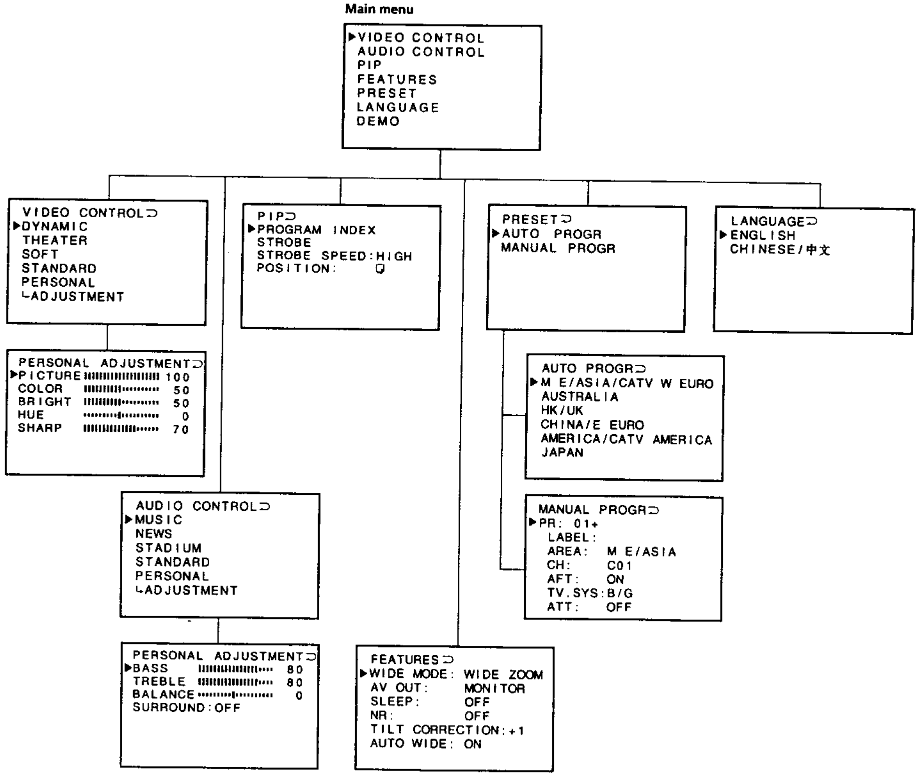
Introducing the menu

You can preset channels and set the wide mode, picture quality, sound, and other settings using the on-screen menus. You can use the buttons on both remote commander and the TV to operate the menus.


Main menu
▶VIDEO CONTROL
AUDIO CONTROL
PIP
FEATURES
PRESET
LANGUAGE
DEMO
VIDEO CONTROL⊃
▶DYNAMIC
THEATER
SOFT
STANDARD
PERSONAL
└ADJUSTMENT
PERSONAL ADJUSTMENT⊃
▶PICTURE 100
COLOR 50
BRIGHT 50
HUE 0
SHARP 70
AUDIO CONTROL⊃
▶MUSIC
NEWS
STADIUM
STANDARD
PERSONAL
└ADJUSTMENT
PERSONAL ADJUSTMENT⊃
▶BASS 80
TREBLE 80
BALANCE 0
SURROUND:OFF
PIP⊃
▶PROGRAM INDEX
STROBE
STROBE SPEED:HIGH
POSITION:
FEATURES⊃
▶WIDE MODE: WIDE ZOOM
AV OUT: MONITOR
SLEEP: OFF
NR: OFF
TILT CORRECTION:+1
AUTO WIDE: ON
PRESET⊃
▶AUTO PROGR
MANUAL PROGR
AUTO PROGR⊃
▶M E/ASIA/CATV W EURO
AUSTRALIA
HK/UK
CHINA/E EURO
AMERICA/CATV AMERICA
JAPAN
MANUAL PROGR⊃
▶PR: 01+
LABEL:
AREA: M E/ASIA
CH: C01
AFT: ON
TV.SYS:B/G
ATT: OFF
LANGUAGE⊃
▶ENGLISH
CHINESE/中文

Getting back to the previous menu

Press △ + or ▽ – to move the cursor (▶) to the first line (⊃) of each menu (except for the main menu), and press ENTER.

Cancelling the menu screen

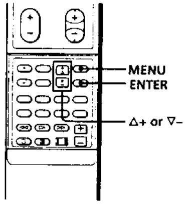
Press MENU.

Notes

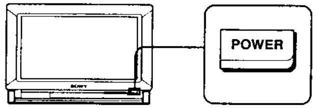
- If more than 60 seconds elapse after you press a button, the menu screen disappears automatically.
- DEMO in the main menu briefly introduces the main features available for the TV. Press any button on the remote commander to stop this function.

Changing the menu language

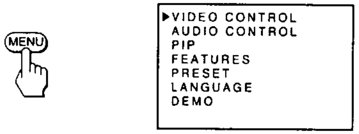
If you prefer Chinese to English, you can change the menu language. You can use the buttons on both the remote commander and the TV.


MENU
ENTER
△+ or ▽–

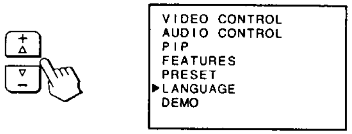
1 **Press POWER on the TV.**



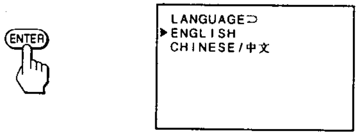
2 **Press MENU.**


MENU
▶VIDEO CONTROL
AUDIO CONTROL
PIP
FEATURES
PRESET
LANGUAGE
DEMO

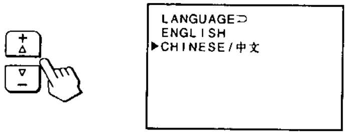
3 **Press △ + or ▽ – to move the cursor (▶) to LANGUAGE.**


VIDEO CONTROL
AUDIO CONTROL
PIP
FEATURES
PRESET
▶LANGUAGE
DEMO

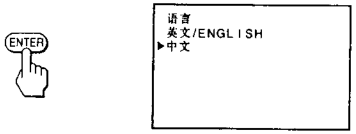
4 **Press ENTER.**


ENTER
LANGUAGE⊃
▶ENGLISH
CHINESE/中文

5 **Press △ + or ▽ – to select CHINESE.**


LANGUAGE⊃
ENGLISH
▶CHINESE/中文

6 **Press ENTER.**


ENTER
语言
英文/ENGLISH
▶中文

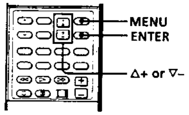
7 **Press MENU to return to the normal screen.**

Presetting channels

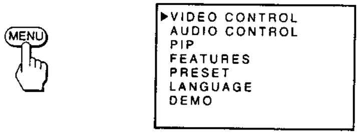
You can preset TV channels easily by storing all the receivable channels automatically. You can also preset channels manually or skip program positions (pages 19 and 20).
You can preset channels using the buttons on the TV as well as those on the remote commander.

Presetting channels automatically

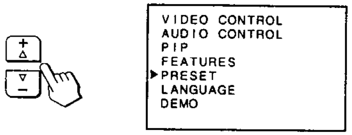
You can preset up to 100 TV channels in numerical sequence from program position 1.


MENU
ENTER
△+ or ▽–

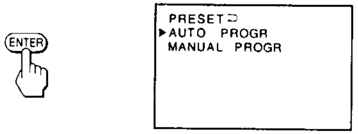
1 **Press MENU.**


MENU
▶VIDEO CONTROL
AUDIO CONTROL
PIP
FEATURES
PRESET
LANGUAGE
DEMO

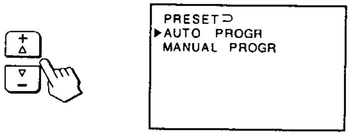
2 **Press △ + or ▽ – to move the cursor (▶) to PRESET.**


VIDEO CONTROL
AUDIO CONTROL
PIP
FEATURES
▶PRESET
LANGUAGE
DEMO

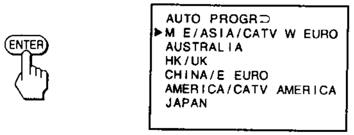
3 **Press ENTER.**


ENTER
PRESET⊃
▶AUTO PROGR
MANUAL PROGR

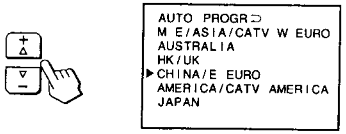
4 **Press △ + or ▽ – to select AUTO PROGR.**


PRESET⊃
▶AUTO PROGR
MANUAL PROGR

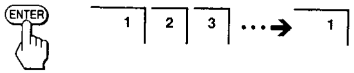
5 **Press ENTER.**


ENTER
AUTO PROGR⊃
▶M E/ASIA/CATV W EURO
AUSTRALIA
HK/UK
CHINA/E EURO
AMERICA/CATV AMERICA
JAPAN

6 **Press △ + or ▽ – to select your area (channel system).**
For the areas allocated in each channel system, see "Channel allocation" on page 24.

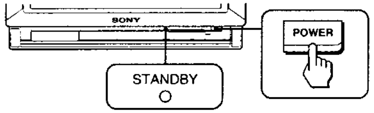

AUTO PROGR⊃
M E/ASIA/CATV W EURO
AUSTRALIA
HK/UK
▶CHINA/E EURO
AMERICA/CATV AMERICA
JAPAN

7 **Press ENTER.**
Presetting starts from program 1.



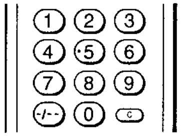
Watching the TV

1 Select the TV program you want to watch.
Press the number buttons or PROGR +/–. The TV turns on automatically and the selected program appears.
When the STANDBY indicator on the front of the TV is not lit, press POWER on the TV, and select the program position.

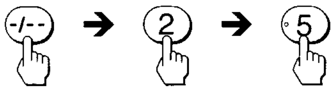

SONY
POWER
STANDBY

To select a program position directly

Press the number buttons.

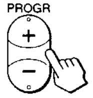

1 2 3
4 5 6
7 8 9
-/-- 0 C

To select a two-digit program position, press "-/--" before the number buttons.
For example, to select program position 25, press "-/--" and then "2" and "5."



To scan through program positions

Press PROGR +/– until the program position you want appears.



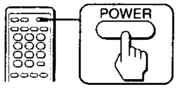
To select a channel directly

Press C (once for VHF/UHF channels, twice for cable TV channels), then press the number buttons (two-digit number for VHF/UHF channels, three-digit number for cable TV channels). For example, to select the VHF/UHF channel 4, press C, 0 then 4.

2 Press VOL +/– to adjust the volume.

Switching off the TV

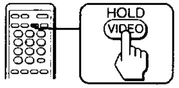
To switch off the TV temporarily, press POWER on the remote commander.
The STANDBY indicator lights.

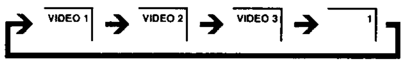


To switch off the TV completely, press POWER on the TV.

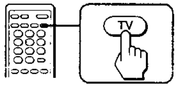
Watching the video input

Press VIDEO/HOLD.



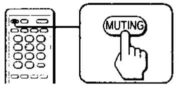

VIDEO 1
VIDEO 2
VIDEO 3
1

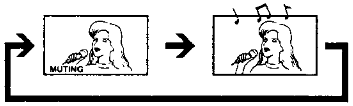
To watch TV, press TV, the number buttons or PROGR +/–.



Muting the sound

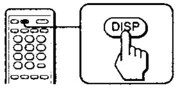
Press MUTING.

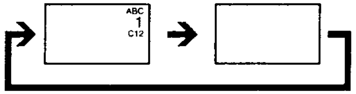




Displaying on-screen information

Press DISP.





Note

- When you press DISP, the on-screen display shows the picture, sound and wide mode settings as well, all of which disappear after three seconds.

Setting the Sleep Timer

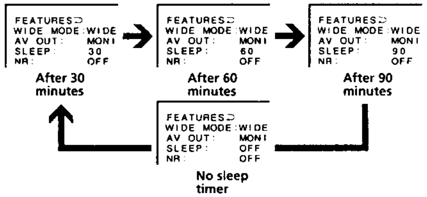
You can set the TV to turn off automatically after the period of time you set.

1 Press MENU.

2 Press △ + or ▽ – to move the cursor (▶) to FEATURES, and press ENTER.

3 Press △ + or ▽ – to move the cursor (▶) to SLEEP, and press ENTER.

4 Press △ + or ▽ – until the time (in minutes) you want appears.


FEATURES
WIDE MODE: WIDE
AV OUT: MONI
SLEEP: 30
NR: OFF
After 30 minutes
FEATURES
WIDE MODE: WIDE
AV OUT: MONI
SLEEP: 60
NR: OFF
After 60 minutes
FEATURES
WIDE MODE: WIDE
AV OUT: MONI
SLEEP: 90
NR: OFF
After 90 minutes
FEATURES
WIDE MODE: WIDE
AV OUT: MONI
SLEEP: OFF
NR: OFF
No sleep timer

5 Press ENTER.

To cancel the Sleep Timer, select OFF, or turn the TV off.

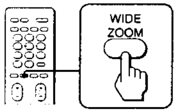
Watching the picture in wide mode

You can enjoy a variety of wide-mode pictures. Select the appropriate mode for the type of picture. Typical uses are as follows.
You can select wide mode using the menu as well as the buttons on the remote commander. Select WIDE MODE from the FEATURES menu, then select the desired mode.

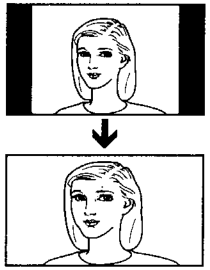
Viewing regular TV programs

Normally, use widezoom mode.

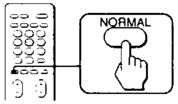
Press WIDEZOOM.

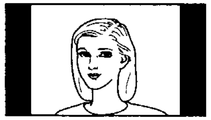


Conventional picture (in normal mode)



To view a picture in the conventional size, press NORMAL.

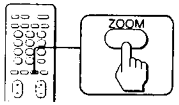




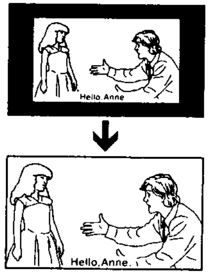
Viewing a movie picture with black bands

Use zoom or subtitle mode to view a movie picture with black bands.

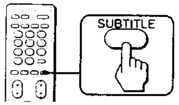
Press ZOOM.



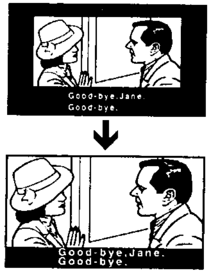
Conventional picture (in normal mode)



When the subtitles are lost in zoom mode, press SUBTITLE.



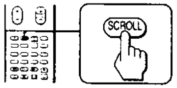
Conventional picture (in normal mode)


Good-bye.Jane.
Good-bye.
Good-bye.Jane.
Good-bye.

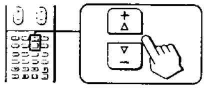
To scroll the picture up or down

When the subtitles are lost even in subtitle mode, you can scroll the picture up or down to view them. The picture scrolls up or down within the range of –5 to +5. You can also use the scroll function in widezoom and zoom modes. Using the scroll function in widezoom mode changes the vertical size of the picture.

1 **Press SCROLL.**



2 **Press Δ + or ∇ – to adjust the position of the picture.**



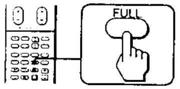
Note

- If you display the PIP screen in zoom mode or scroll the picture with the PIP screen in zoom mode or subtitle mode, the PIP screen may be lost. However, this does not indicate a malfunction.

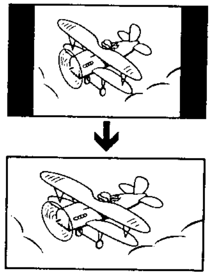
Viewing a video game screen

When you view a video game screen with dynamic effect, use full mode.

Press FULL.



Conventional picture (in normal mode)



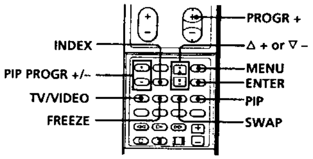
To switch the auto wide function

When AUTO WIDE is set to ON, the factory setting, the TV automatically displays the picture on the screen in full mode if an S1 Video signal is received. If you want to select another mode for the signal, set AUTO WIDE to OFF.

1 **Press MENU.**
2 **Press Δ + or ∇ – to move the cursor (▶) to FEATURES, and press ENTER.**
3 **Press Δ + or ∇ – to move the cursor (▶) to AUTO WIDE, and press ENTER.**
4 **Press Δ + or ∇ – to select OFF, and press ENTER.**

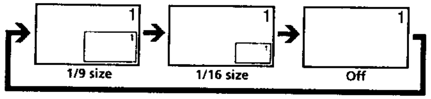
Using the Picture-in-Picture features

You can display a Picture-in-Picture (PIP) screen (small picture) within the main picture of a TV program or a video input.
For the KV-W28, you have to use the connected VCR's built-in tuner to enjoy two different TV programs simultaneously.



Displaying PIP

Press PIP.

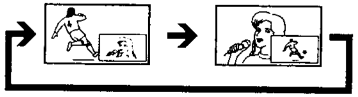


Selecting a TV program or video input in the PIP screen

To select a TV program, press PIP PROGR +/– (yellow buttons) for the KV-W32.
For the KV-W28, select a TV program with the PROGR +/– buttons on the connected VCR.
To select a video input, press TV/VIDEO.

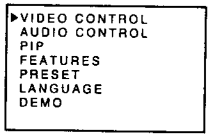
Swapping pictures between the main and PIP screens

Press SWAP.



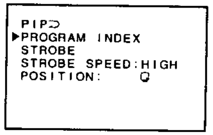
Changing the position of the PIP screen

1 **Press MENU.**



```
▶VIDEO CONTROL
 AUDIO CONTROL
 PIP
 FEATURES
 PRESET
 LANGUAGE
 DEMO
```

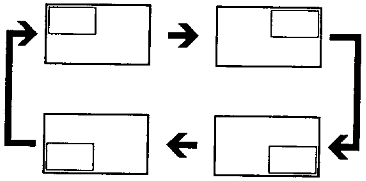
2 **Press Δ + or ∇ – to move the cursor (▶) to PIP, and press ENTER.**



```
 PIP⊃
▶PROGRAM INDEX
 STROBE
 STROBE SPEED:HIGH
 POSITION:    ▣
```

3 **Press Δ + or ∇ – to move the cursor (▶) to POSITION, and press ENTER.**

4 **Press Δ + or ∇ – to select the position you want.**
Pressing Δ + changes the position as shown below. Pressing ∇ – changes the position in reverse order.



Note

- If you display the PIP screen in zoom or subtitle mode, you can move the PIP screen only to the lower left or the lower right.

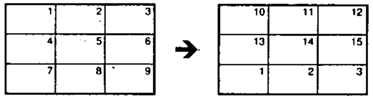
Freezing the PIP screen

Press FREEZE.
To restore the normal picture, press FREEZE again.

Checking all the preset programs (Program Index)

Press INDEX.
The nine preset programs appear in the separated screen in sequence, switching the picture for each second. The sound is muted. Then next nine sequential programs appear. After all the preset programs are displayed, the programs switch the picture with the sound for each five seconds.

Pressing PROGR + also switches to the next nine programs.



To restore the normal picture

Press the number buttons which you want to watch (e.g., for program 25, press -/--, 2 and 5). Pressing INDEX also restores the normal picture.

Notes

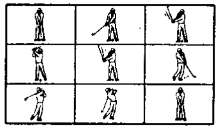
- You can also display nine sequential TV programs using the menu. Select PROGRAM INDEX from the PIP menu, then press ENTER.
- If you display different TV systems in the Program Index screen, the size of the separated screens may be different.

Displaying frame-by-frame pictures (Strobe)

1 Press MENU.

2 Press △ + or ▽ – to move the cursor (▶) to PIP, and press ENTER.

3 Press △ + or ▽ – to move the cursor (▶) to STROBE, and press ENTER.



To select the strobe speed

Select STROBE SPEED from the PIP menu, and press ENTER. Then select HIGH (3 seconds), MIDDLE (7 seconds) or LOW (12 seconds) with △ + or ▽ –, and press ENTER.

To restore the normal picture

Select STROBE from the PIP menu again, and press ENTER.

You can also restore the normal picture with TV, VIDEO, PROGR +/–, POWER or Wide mode buttons.

Note

- You can hear the normal sound when using the strobe feature.

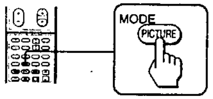
Notes on PIP features

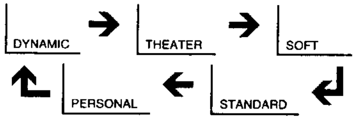
- When you display a VCR picture in the PIP screen at a speed other than normal speed, the picture may be noisy depending on the VCR. The picture can be improved by selecting the smaller size of the PIP screen.
- If you display different color systems in the main screen and the PIP screen, the size of the PIP screen may be different and the PIP picture may be noisy. This is not caused by the malfunction of the TV.

Selecting the picture mode

You can select the picture mode using the menu as well as the PICTURE MODE button on the remote commander. Select VIDEO CONTROL from the main menu, then select the desired mode.

Press PICTURE MODE until the mode you want appears on the screen.

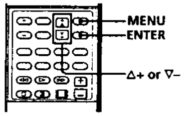




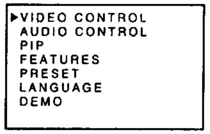
Select	To
DYNAMIC	Display more contrast picture
THEATER	Display darker and finely detailed picture suitable for movies
SOFT	Display softer picture suitable for video games or for viewing in a dark room
STANDARD	Display normal contrast picture
PERSONAL	Display the picture that is adjusted using ADJUSTMENT in the VIDEO CONTROL menu

Adjusting the picture setting (ADJUSTMENT)

You can adjust the picture quality to suit your taste with the ADJUSTMENT option. The adjusted settings are stored in the PERSONAL option.

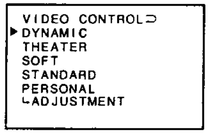


1 Press MENU.



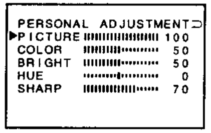
```
▶VIDEO CONTROL
 AUDIO CONTROL
 PIP
 FEATURES
 PRESET
 LANGUAGE
 DEMO
```

2 Press △ + or ▽ – to move the cursor (▶) to VIDEO CONTROL, and press ENTER.



```
 VIDEO CONTROL⊃
▶DYNAMIC
 THEATER
 SOFT
 STANDARD
 PERSONAL
 └ADJUSTMENT
```

3 Press △ + or ▽ – to move the cursor (▶) to ADJUSTMENT, and press ENTER.



```
 PERSONAL  ADJUSTMENT⊃
▶PICTURE                100
 COLOR                   50
 BRIGHT                  50
 HUE                      0
 SHARP                   70
```

4 Press △ + or ▽ – to move the cursor (▶) to the item you want to adjust, and press ENTER.

5 Press △ + or ▽ – to adjust the item, and press ENTER.

Item	Press △ + to	Press ▽ – to
PICTURE	Increase picture contrast	Decrease picture contrast
COLOR	Increase color intensity	Decrease color intensity
BRIGHT	Brighten the picture	Darken the picture
HUE	Make skin tones become greenish	Make skin tones become reddish
SHARP	Sharpen the picture	Soften the picture

6 To adjust other items, repeat steps 4 and 5.

7 Press MENU to return to the normal screen.

Note

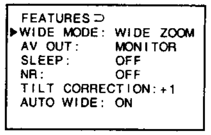
- You can adjust HUE for NTSC color system only.

Reducing the noise of the picture (NR)

You can reduce the noise level of the picture when the TV receives a weak signal or when you play a video tape that is in poor condition.

1 Press MENU.

2 Press △ + or ▽ – to select FEATURES, and press ENTER.



```
 FEATURES⊃
▶WIDE MODE: WIDE ZOOM
 AV OUT:    MONITOR
 SLEEP:     OFF
 NR:        OFF
 TILT CORRECTION:+1
 AUTO WIDE: ON
```

3 Press △ + or ▽ – to select NR, and press ENTER.

4 Press △ + or ▽ – to select ON, and press ENTER.

To turn the noise reduction off, select OFF and press ENTER.

If the color of the picture is abnormal when receiving programs through the ╥ (antenna) terminal

Press COLOR SYSTEM on the TV or change the TV system setting from the menu as described below until the color becomes normal.

1. **Press MENU.**
2. **Press △ + or ▽ – to move the cursor (▶) to PRESET, and press ENTER.**
3. **Press △ + or ▽ – to move the cursor (▶) to MANUAL PROGR, and press ENTER.**
4. **Press △ + or ▽ – to move the cursor (▶) to TV SYS, and press ENTER.**
5. **Press △ + or ▽ – to change the TV system until the color becomes normal.**

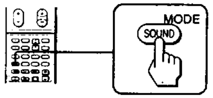
Note

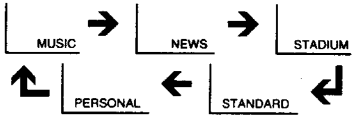
- Normally set COLOR SYSTEM to AUTO.

Selecting the sound mode

You can select the sound mode using the menu as well as the SOUND MODE button on the remote commander. Select AUDIO CONTROL from the main menu, then select the desired mode.

Press SOUND MODE until the mode you want appears on the screen.

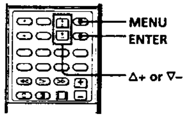




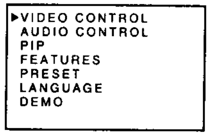
Select	To
MUSIC	Listen to music programs. It gives sound with a live concert effect.
NEWS	Listen to news program. A person's voice can be heard clearly.
STADIUM	Listen to sports program. It gives sound with a sports stadium effect.
STANDARD	Listen to sound other than music, news or sports program.
PERSONAL	Listen to the sound that is adjusted using ADJUSTMENT in the AUDIO CONTROL menu.

Adjusting the sound setting (ADJUSTMENT)

You can adjust the sound quality to suit your taste with the ADJUSTMENT option. The adjusted settings are stored in the PERSONAL option.

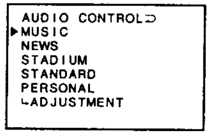


1 Press MENU.



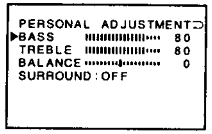
```
▶VIDEO CONTROL
 AUDIO CONTROL
 PIP
 FEATURES
 PRESET
 LANGUAGE
 DEMO
```

2 Press Δ + or ∇ – to move the cursor (▶) to AUDIO CONTROL, and press ENTER.



```
 AUDIO CONTROL⊃
▶MUSIC
 NEWS
 STADIUM
 STANDARD
 PERSONAL
 └ADJUSTMENT
```

3 Press Δ + or ∇ – to move the cursor (▶) to ADJUSTMENT, and press ENTER.



```
 PERSONAL ADJUSTMENT⊃
▶BASS     ||||||||||||····  80
 TREBLE   ||||||||||||····  80
 BALANCE ·······|·······    0
 SURROUND : OFF
```

4 Press Δ + or ∇ – to move the cursor (▶) to the item you want to adjust, and press ENTER.

5 Press Δ + or ∇ – to adjust the item, and press ENTER.

Item	Press Δ + to	Press ∇ – to
BASS	Increase the bass sound	Decrease the bass sound
TREBLE	Increase the treble sound	Decrease the treble sound
BALANCE	Increase the volume of right speaker	Increase the volume of left speaker

6 To adjust other items, repeat steps 4 and 5.

7 Press MENU to return to the normal screen.

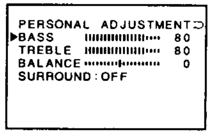
Listening to surround sound

You can enjoy a surround sound effect that is like being in a movie theater or a concert hall when receiving stereo signals.

1 Press MENU.

2 Press Δ + or ∇ – to move the cursor (▶) to AUDIO CONTROL, and press ENTER.

3 Press Δ + or ∇ – to move the cursor (▶) to ADJUSTMENT, and press ENTER.



```
 PERSONAL ADJUSTMENT⊃
▶BASS     ||||||||||||····  80
 TREBLE   ||||||||||||····  80
 BALANCE ·······|·······    0
 SURROUND : OFF
```

4 Press Δ + or ∇ – to move the cursor (▶) to SURROUND, and press ENTER.

5 Press Δ + or ∇ – to select ON, and press ENTER.

If the sound is distorted or noisy when receiving programs through the ╥ (antenna) terminal

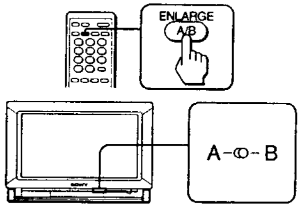
Change the TV system setting as follows until the sound becomes clear.

1. **Press MENU.**
2. **Press Δ + or ∇ – to move the cursor (▶) to PRESET, and press ENTER.**
3. **Press Δ + or ∇ – to move the cursor (▶) to MANUAL PROGR, and press ENTER.**
4. **Press Δ + or ∇ – to move the cursor (▶) to TV SYS, and press ENTER.**
5. **Press Δ + or ∇ – to change the TV system until the sound becomes clear.**

Selecting a stereo or bilingual program

You can enjoy stereo sound or bilingual program of NICAM and A2 (German) stereo systems. The initial setting is stereo sound.

Press A/B/ENLARGE repeatedly until you receive the sound you want.
The sound changes and the corresponding indicator lights up as follows:



When receiving a NICAM program:

Broadcasting	On-screen Display	Selected sound (Indicator lit)
NICAM stereo	NICAM	→ Stereo → Regular (A and B)
NICAM bilingual	NICAM	→ A → B → Regular (A) (B)
NICAM monaural	NICAM	→ NICAM monaural (A) Regular ←

When receiving an A2 (German) stereo program:

Broadcasting	On-screen display	Selected sound (Indicator lit)
A2 (German) stereo	STEREO	→ Stereo → Monaural (A and B)
A2 (German) bilingual	—	→ A → B (A) (B)

Receiving area for NICAM and A2 (German) stereo programs

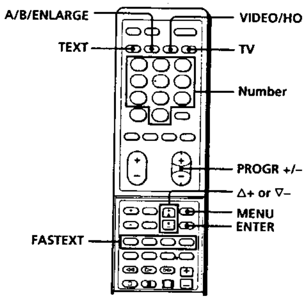
System	Receiving area
NICAM	Hong Kong, Singapore, New Zealand, etc.
A2 (German) stereo	Australia, Malaysia, Thailand, etc.

Notes

- If the signal is very weak, the sound becomes monaural.
- If the stereo sound is noisy, select "regular" or "mono." The sound becomes monaural, however, the noise will be reduced.

Viewing Teletext

TV stations broadcast an information service called Teletext via a local TV channel.
Teletext service allows you to receive various information such as weather forecasts or news at any time. Some of the features, however, may not be available depending on the Teletext service.



Displaying Teletext

1 **Select a TV channel which carries the Teletext broadcast you want to watch.**

2 **Press TEXT to display the Teletext.**
A Teletext page (normally the index page) is displayed. If there is no Teletext broadcast, P100 appears in the top left corner of the screen.

To switch Teletext off, press TV.

Superimposing a Teletext page on the TV picture

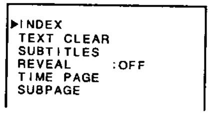
Press TEXT.
Each time you press TEXT, the screen changes as follows:

→ Teletext → Teletext and TV → TV →

Checking the contents of a Teletext service (INDEX)

When Teletext is switched on, you can display the Teletext menu.

1 **Press MENU.**



```
▶INDEX
 TEXT CLEAR
 SUBTITLES
 REVEAL      :OFF
 TIME PAGE
 SUBPAGE
```

2 **Press Δ + or ∇ – to move the cursor (▶) to INDEX, and press ENTER.**

Selecting a Teletext page

Press the number buttons to enter the three-digit page number of the Teletext number you want.
If you make a mistake, re-enter the correct page number.

To access the next or previous page, press PROGR +/–.

Note

- When you request another Teletext page while viewing one Teletext page, the page scrolling may pause on a different page depending on the Teletext service, but the search will continue till the requested page is displayed.

Preventing a Teletext page from being updated (HOLD)

A Teletext page may consist of several subpages. You can stop the page scrolling in order to read the text at your own pace.

Press VIDEO/HOLD.
HOLD appears in the top left corner of the screen.

To resume normal Teletext operation, press TEXT.

Using FASTEXT

This feature allows you to quickly access a Teletext page that uses FASTEXT. When a FASTEXT page is broadcast, a color-coded menu appears at the bottom of the screen. The colors of the menu correspond to the red (TV/VIDEO), green (FREEZE), yellow (SWAP) and blue (PIP) buttons on the remote commander. These colored buttons function as the FASTEXT buttons in Teletext mode.

Press the colored button which corresponds to the color-coded menu.
The page is displayed after a few seconds.

Enlarging the Teletext display (ENLARGE)

Each time you press A/B/ENLARGE, the Teletext display changes as follows:

→Enlarge upper half→Enlarge lower half→Normal size→

Revealing concealed information (REVEAL)

Sometimes pages contain concealed information, such as answers to a quiz. The reveal option discloses the information.

1 **Press MENU.**

2 **Press Δ + or ∇ – to move the cursor (▶) to REVEAL, and press ENTER.**

3 **Press Δ + or ∇ – to select ON, and press ENTER.**

To conceal the information again, select OFF.

Watching a TV program while waiting for a requested Teletext page (TEXT CLEAR)

1 **Select the Teletext page to which you want to refer.**

2 **Press MENU.**

3 **Press Δ + or ∇ – to move the cursor (▶) to TEXT CLEAR, and press ENTER.**

4 **When the page number is displayed on the screen, press TEXT to switch the Teletext on.**

To restore the normal Teletext reception, press TEXT.

Displaying subtitles (SUBTITLES)

Your Teletext service informs you if a TV program is subtitled.

1 **Press MENU.**

2 **Press Δ + or ∇ – to move the cursor (▶) to SUBTITLES, and press ENTER.**

Note

- If the subtitles are not broadcast on page 888, select the subtitle page using the number buttons.

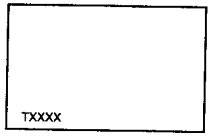
Displaying a Teletext page at the requested time (TIME PAGE)

You can display a time-coded page (e.g. an alarm page) at the time you preset.

1 **Press MENU.**

2 **Press Δ + or ∇ – to move the cursor (▶) to TIME PAGE, and press ENTER.**

3 **Press the number buttons to enter four digits for the desired time. For example, to enter 7:30, press 0,7,3 and 0.**



At the requested time, the page appears on the screen.

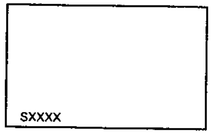
To restore the normal Teletext reception, press TEXT.

Displaying a particular page among several subpages (SUBPAGE)

1 **Press MENU.**

2 **Press Δ + or ∇ – to move the cursor (▶) to SUBPAGE, and press ENTER.**

3 **Press the number buttons or PROGR +/– to enter four digits for the desired subpage. For example, to display the second page of a sequence, press 0, 0, 0 and 2.**



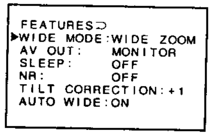
Customizing the TV

Using the AV OUT (advance rec-out) terminal

You can select the output signal from the MON/TV OUT jacks at the rear of the TV.
The S Video output can be used only when MONITOR is selected. However, it cannot be used in Program Index or Strobe mode even though MONITOR is selected.

1 **Press MENU.**

2 **Press △ + or ▽ – to select FEATURES, and press ENTER.**



```
 FEATURES⊃
▶WIDE MODE:WIDE ZOOM
 AV OUT:    MONITOR
 SLEEP:     OFF
 NR:        OFF
 TILT CORRECTION:+1
 AUTO WIDE:ON
```

3 **Press △ + or ▽ – to select AV OUT, and press ENTER.**

4 **Press △ + or ▽ – to select the output signal, and press ENTER.**

Select	To
TV	Output the TV signal.
MONITOR	Output the signal of the picture you are watching as a monitor.

Selecting a TV program output from MON/TV OUT jacks while using the PIP feature

- For the KV-W28, when watching a TV program in the main screen, use PROGR +/–. When watching a video input in the main screen and a TV program in the PIP screen, use PIP PROGR +/– on the remote commander.
  For the KV-W32, use PROGR +/–.

Note

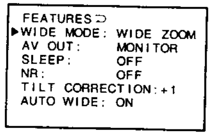
- Do not change the channel while recording with a VCR through the MON/TV OUT jacks. If you change the channel, it also changes the channel you are recording.

Adjusting the tilt of the picture

You can adjust the tilt of the picture if it is not aligned to the TV screen. This may happen due to the direction of the earth's magnetic fields in relation to the position of the TV.

1 **Press MENU.**

2 **Press △ + or ▽ – to select FEATURES, and press ENTER.**



```
 FEATURES⊃
▶WIDE MODE: WIDE ZOOM
 AV OUT:    MONITOR
 SLEEP:     OFF
 NR:        OFF
 TILT CORRECTION:+1
 AUTO WIDE: ON
```

3 **Press △ + or ▽ – to select TILT CORRECTION, and press ENTER.**

4 **Press △ + or ▽ – to select the most suitable value to align the picture position, and press ENTER.**

TILT CORRECTION:

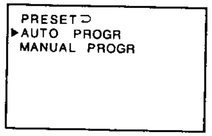
–5←–4←–3←–2←–1←0→+1→+2→+3→+4→+5
press ▽ –   press △ +

Presetting channels manually

To change the program position for a channel or to receive a channel with a weak signal, preset the channel manually.
For example, preset a channel in program position 8.

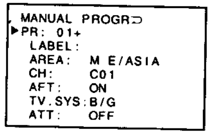
1 **Press MENU.**

2 **Press △ + or ▽ – to move the cursor (▶) to PRESET, and press ENTER.**



```
 PRESET⊃
▶AUTO PROGR
 MANUAL PROGR
```

3 **Press △ + or ▽ – to select MANUAL PROGR, and press ENTER.**



```
 MANUAL PROGR⊃
▶PR: 01+
  LABEL:
  AREA:   M E/ASIA
  CH:     C01
  AFT:    ON
  TV.SYS:B/G
  ATT:    OFF
```

4 **Select the program position to which you want to preset a channel.**

(1) Press △ + or ▽ – to select PR, and press ENTER.
(2) Press △ + or ▽ – to select 8.
You can also select the program position with PROGR +/– or the number buttons (e.g, for program 24, press -/--, 2 and 4).
(3) Press ENTER.

5 **Select your area (channel system).**

For the areas allocated in each channel system, see "Channel allocation" on page 24.
(1) Press △ + or ▽ – to select AREA, and press ENTER.
(2) Press △ + or ▽ – to select your area, and press ENTER.

6 **Select a channel which you want to preset.**

(1) Press △ + or ▽ – to select CH, and press ENTER.
(2) Press △ + or ▽ – until the channel you want appears on the screen.
You can also select the channel directly using the number buttons. Press C (once for VHF/UHF channels, twice for cable TV channels), then the number buttons (e.g., for channel 5, press 0 and 5).
(3) Press ENTER.

To preset other channels
Repeat steps 4 to 6.

Disabling program positions

By disabling unused or unwanted program positions, you can skip those positions when you press PROGR +/–.
For example, disable program position 8.

1 **Display the MANUAL PROGR menu. (Follow steps 1 to 3 in "Presetting channels manually" on page 19.)**

2 **Press △ + or ▽ – to move the cursor (▶) to PR, and press ENTER.**

3 **Press PROGR + or – until 8 appears.**

4 **Press △ + or ▽ – to select "–", and press ENTER.**

To skip other program positions, repeat steps 3 and 4.

To restore the skipped program positions
In step 4 above, press △ + or ▽ – to select "+," and press ENTER.

Customizing channel names

You can caption each channel number using up to five letters to be displayed on the screen.

1 **Display the MANUAL PROGR menu. (Follow steps 1 to 3 in "Presetting channels manually" on page 19.)**

2 **Press △ + or ▽ – to move the cursor (▶) to PR, and press ENTER.**

3 **Press △ + or ▽ – to select the program position you want to caption and press ENTER.**

4 **Press △ + or ▽ – to move the cursor (▶) to LABEL, and press ENTER.**

5 **Press △ + or ▽ – to select a letter or number, and press ENTER for each caption space (up to five.)**

Each time you press △ + or ▽ –, the letter (number) changes as shown below.
A→B→...→Z→0→1→...→9→ – →:→/→. →
+→__ (space)
For the caption space you want to leave blank, select "__."

6 **Repeat steps 2 to 5 to caption other channels.**

To erase a caption
In step 5 above, select "_ (space)."

Manual fine-tuning

Normally, the automatic fine-tuning (AFT) is operating. However, if the picture of a channel is distorted, you can use the manual fine-tuning function for the channel to obtain better picture reception.

1 **Display the MANUAL PROGR menu. (Follow steps 1 to 3 in "Presetting channels manually" on page 19.)**

2 **Press △ + or ▽ – to move the cursor (▶) to PR, and press ENTER.**

3 **Press △ + or ▽ – to select the program position corresponding to the channel which you want to manually fine-tune, and press ENTER.**

4 **Press △ + or ▽ – to move the cursor (▶) to AFT, and press ENTER.**

5 **Press △ + or ▽ – to select OFF, and press ENTER.**

6 **Press △ + or ▽ – to fine-tune the channel so that you get the best TV reception.**
As you press these buttons, the frequency changes from –128 to +128.

7 **After fine-tuning, press ENTER.**
The fine-tuned level is stored.

Improving TV signal

If the reception signal is very strong, you can attenuate it to obtain better picture reception.

1 **Display the MANUAL PROGR menu. (Follow steps 1 to 3 in "Presetting channels manually" on page 19.)**

2 **Press △ + or ▽ – to move the cursor (▶) to PR, and press ENTER.**

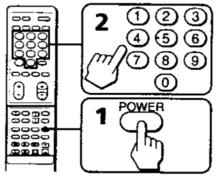
3 **Press △ + or ▽ – to select the program position corresponding to the channel whose signal is very strong, and press ENTER.**

4 **Press △ + or ▽ – to move the cursor (▶) to ATT, and press ENTER.**

5 **Press △ + or ▽ – to select ON, and press ENTER.**

Setting the remote command mode

You can use the supplied remote commander to operate the TV and Sony video equipment, such as a VCR or multi-disc player. To operate Sony video equipment, first set the remote command mode for the video equipment you want to use.

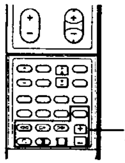

2
1
2
3
4
5
6
7
8
9
0
1
POWER

1 **Press and hold the POWER button in the VCR control area.**

2 **Press the number buttons that correspond to the remote command mode.**

Mode number buttons	Remote command mode
0 and then 1	VTR1 (e.g., Beta format VCR)
0 and then 2	VTR2 (e.g., 8 mm format VCR)
0 and then 3	VTR3 (e.g., VHS format VCR)
0 and then 4	MDP (multi-disc player)

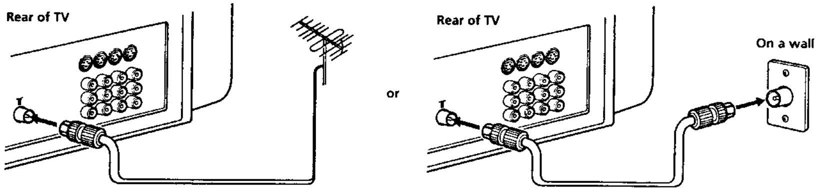
After setting the remote command mode, you can use the following buttons to operate the video equipment.


Operation buttons for video equipment

Connections

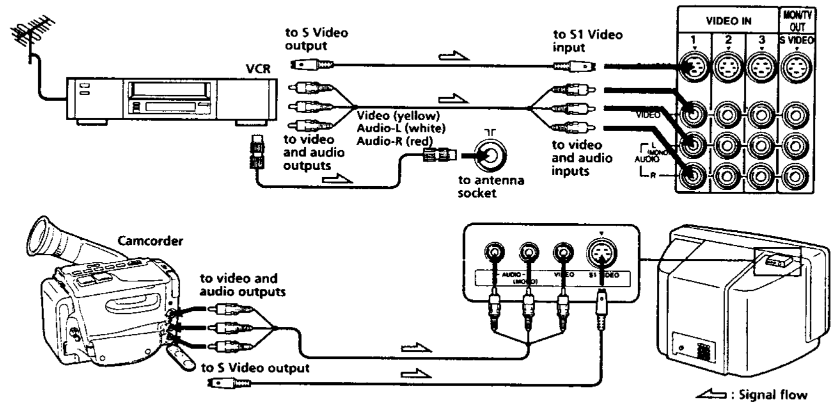
Connecting a VHF antenna or a combination VHF/UHF antenna—75-ohm coaxial cable (round)

Attach an optional IEC antenna connector to the 75-ohm coaxial cable.
Plug the connector into the ⫪ (antenna) terminal at the rear of the TV.


Rear of TV
or
Rear of TV
On a wall

Connecting optional equipment

You can connect optional audio/video equipment to this TV such as a VCR, multi-disc player, camcorder, headphones, or stereo system.


Rear of TV
VIDEO IN
1
2
3
MONITV OUT
S VIDEO
to S Video output
VCR
to S1 Video input
Video (yellow)
Audio-L (white)
Audio-R (red)
to video and audio outputs
to antenna socket
to video and audio inputs
VIDEO
L (MONO)
AUDIO
R
Camcorder
to video and audio outputs
to S Video output
AUDIO-L (MONO)
VIDEO
S1 VIDEO

⊲ : Signal flow

When connecting a monaural VCR
Connect the yellow plug to VIDEO and the white plug to AUDIO-L (mono).

Note on the S1 Video signal
When the S1 Video signal is input through the VIDEO IN 1/2/3 jack, set AUTO WIDE to OFF if you do not want to display the picture in full wide mode (see page 11).

If both S Video and video signals are input
The S Video input signal is selected. To view a video signal, disconnect the S Video connection.

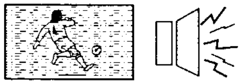
Note on the video input
When no signal is input, the screen becomes blue.

When connecting a VCR to the VIDEO IN 3 jacks
This TV is equipped with two sets of the VIDEO IN 3 jacks. Two sets are not available to be used at the same time. When using equipment connected, turn off other equipment not in use.

Troubleshooting

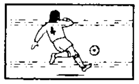
If you have any problems, read this manual again and check the countermeasure for each of the symptoms listed below.
If the problem persists, contact your nearest authorized service center or dealer.

Snowy picture
Noisy sound



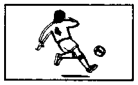
- → Check the antenna.
- → Check the antenna connection on the TV and on the wall.

Dotted lines or stripes



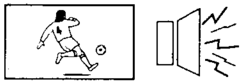
- → This may be caused by local interference (e.g. cars, neon signs, hair dryers, etc.) Adjust the antenna for minimum interference.

Double images or "ghosts"



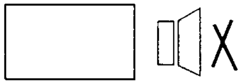
- → This may be caused by reflections from nearby mountains or buildings. A highly directional antenna may improve the picture.

Good picture
Noisy sound



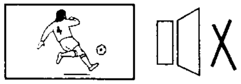
- → Check the TV SYSTEM setting.

No picture
No sound



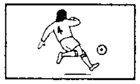
- → Press POWER.
- → Press POWER to turn the TV off for 5 to 6 seconds, then turn it on again by pressing POWER.
- → Check the antenna connection.
- → Check the VCR connections.

Good picture
No sound



- → Press VOL +.
- → Press MUTING.

No color



- → Adjust COLOR in the VIDEO CONTROL menu's ADJUSTMENT option.
- → Check the COLOR SYSTEM setting.

TV cabinet creaks

- → Even if the picture or the sound is normal, changes in the room temperature sometimes make the TV cabinet expand or contract, making a noise. This does not indicate a malfunction.

Channel allocation

Areas allocated in each channel system

M E/ASIA/CATV W EURO
Afghanistan, Albania, Algeria, Austria, Bahrain, Bangladesh, Belgium, Brunei, Canary Islands, Cyprus, Denmark, Egypt, Finland, Germany, Ghana, Gibraltar, Greece, Iceland, India, Indonesia, Iran, Iraq, Italy, Jordan, Kenya, Republic of Korea, Kuwait, Lebanon, Liberia, Libya, Luxemburg, Malaysia, Malta, Mauritania, Mauritius, Maldives Rep., Morocco, Mozambique, Nepal, Netherlands, New Zealand, Nicaragua, Nigeria, Norway, Oman, Pakistan, Portugal, Qatar, Sarawak, Saudi Arabia, Seychelles, Sierra Leone, Singapore, Spain, Srilanka, Sudan, Swaziland, Sweden, Switzerland, Syrian Arab Rep., Tanzania, Thailand, Tunisia, Turkey, Uganda, United Arab Emirates, Western Sahara, Yemen Arab Republic, People's Dem. Rep. of Yemen, Yugoslavia, Zambia, Zimbabwe

AUSTRALIA
Australia, New Zealand

HK/UK
Hong kong, Ireland, Lesotho, South Africa, United Kingdom

CHINA/E EURO
Benin, Bulgaria, China, Congo, Czechoslovakia, Djibouti Republic, Gabon, Guadeloupe, Guiana, Guinea (P.P.R.), Hungary, Ivory Coast, Dem. People's Rep. of Korea, Madagascar, Mongolia, New Caledonia, Niger, Poland, Reunion, Rumania, Senegal, Tahiti, Togo, Former U.S.S.R., Vietnam, Zaire

AMERICA/CATV AMERICA
Bahama Islands, Barbados, Belize, Bermuda, Bolivia, Burma (UHF), Canada, Chile, Colombia, Costa Rica, Cuba, Dominica Republic, Ecuador, El Salvador, Guam, Guatemala, Haiti, Hawaii, Honduras, Jamaica, Laos, Mexico, Panama, Peru, Philippines, Puerto Rico, Surinam, Taiwan, Trinidad & Tobago, U.S.A., U.S.A. (CATV), Venezuela

JAPAN
Burma (Myanmar) (VHF), Japan (VHF, UHF)

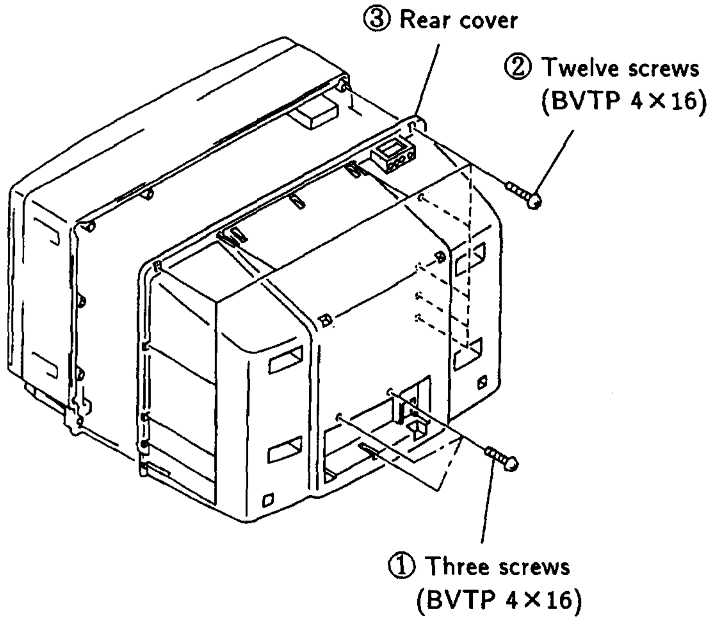
TV and color systems of each channel system

The TV system and color system are automatically set according to the channel system.

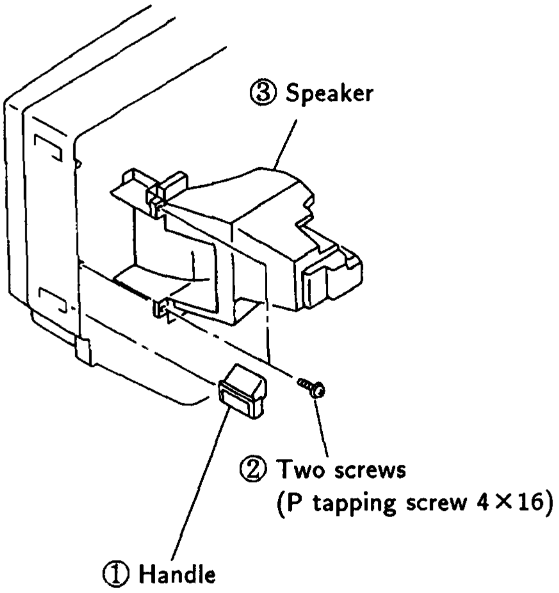
Channel system	TV system	Color system
M E/ASIA/ CATV W EURO	B/G, H: West European TV standard	AUTO
AUSTRALIA	B/G, H: Australian TV standard	AUTO
HK/UK	I: British TV standard	AUTO
CHINA/E EURO	D/K: East European TV standard	AUTO
AMERICA/CATV AMERICA	M: American TV standard	AUTO
JAPAN	M: Japan TV standard	AUTO

SECTION 2
DISASSEMBLY

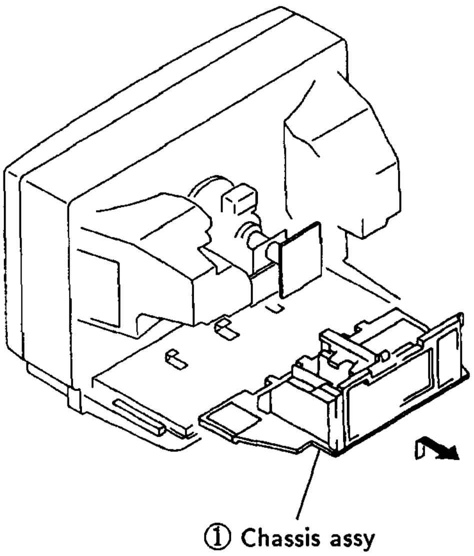
2-1. REAR COVER REMOVAL


③ Rear cover
② Twelve screws
(BVTP 4×16)
① Three screws
(BVTP 4×16)

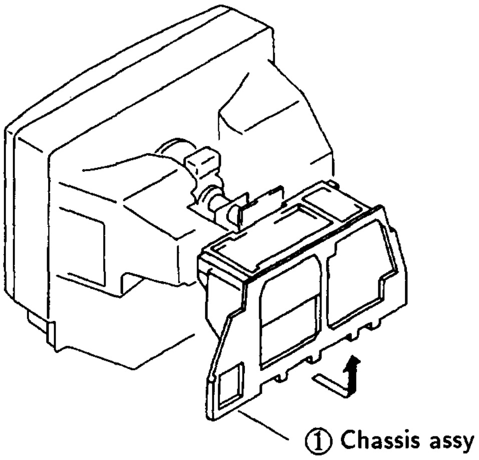
2-2. SPEAKER REMOVAL


③ Speaker
② Two screws
(P tapping screw 4×16)
① Handle

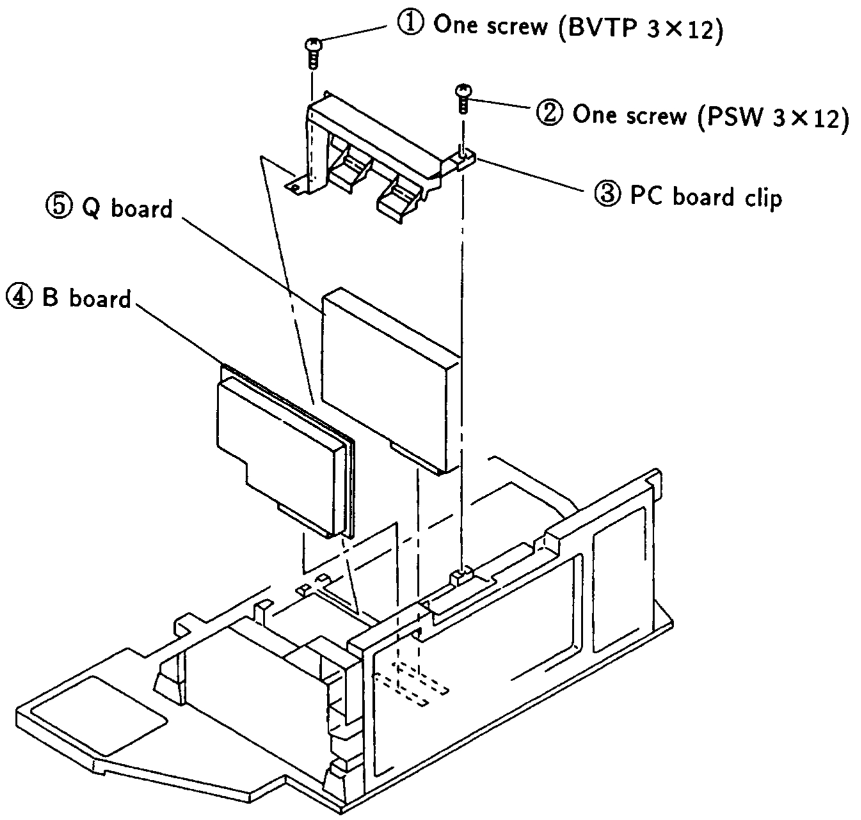
2-3. CHASSIS ASSY REMOVAL


① Chassis assy

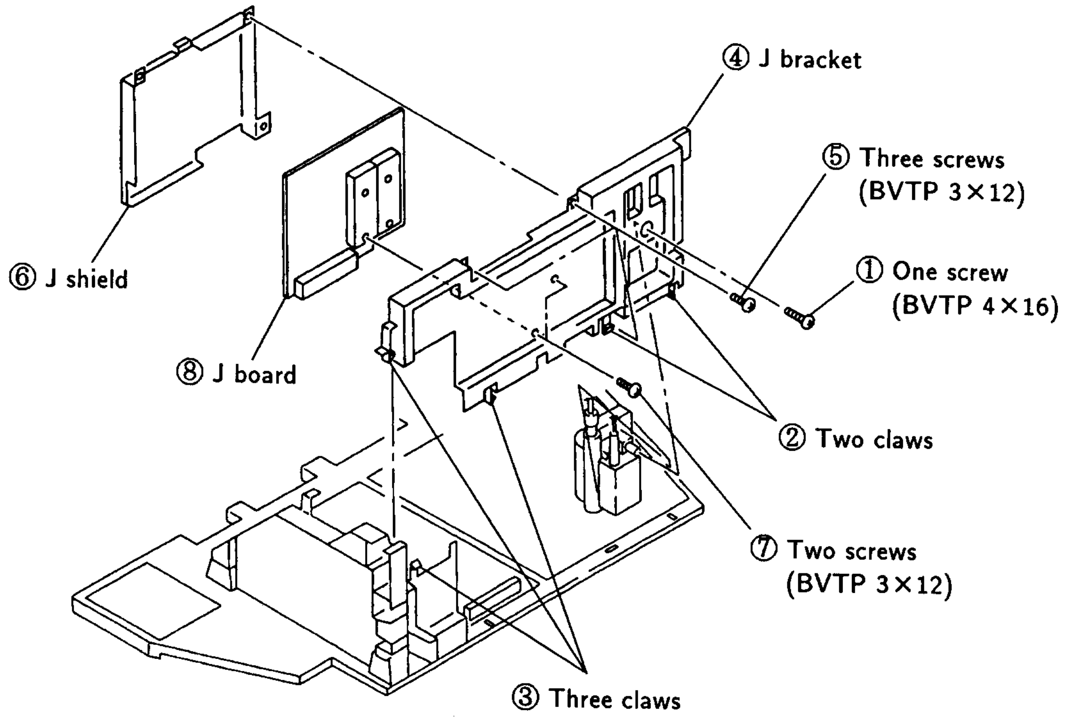
2-4. SERVICE POSITION


① Chassis assy

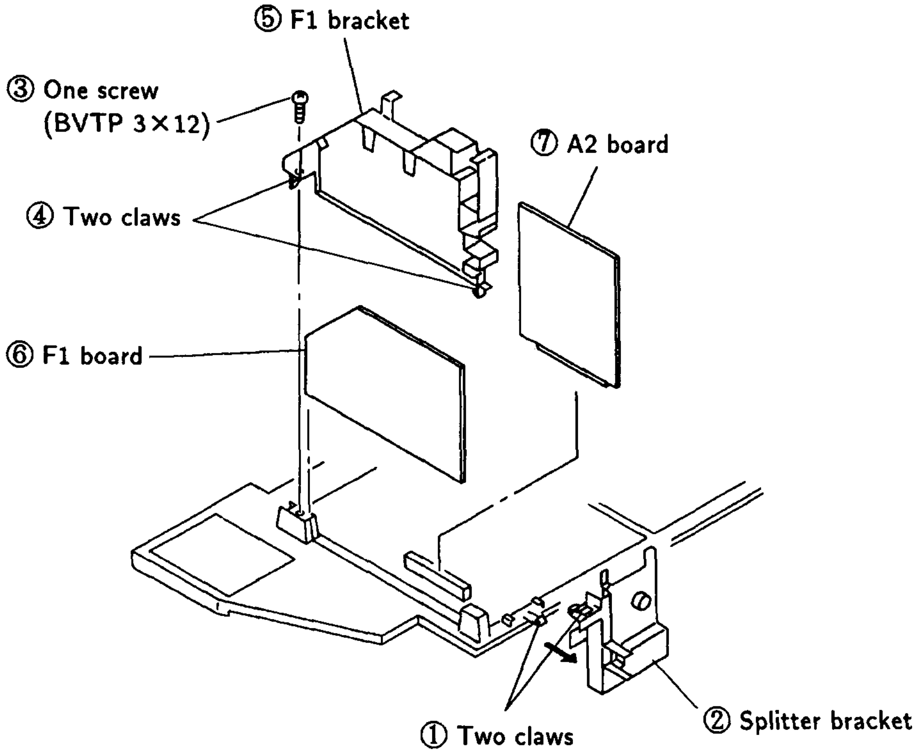
2-5. B AND Q BOARDS REMOVAL


① One screw (BVTP 3×12)
② One screw (PSW 3×12)
③ PC board clip
⑤ Q board
④ B board

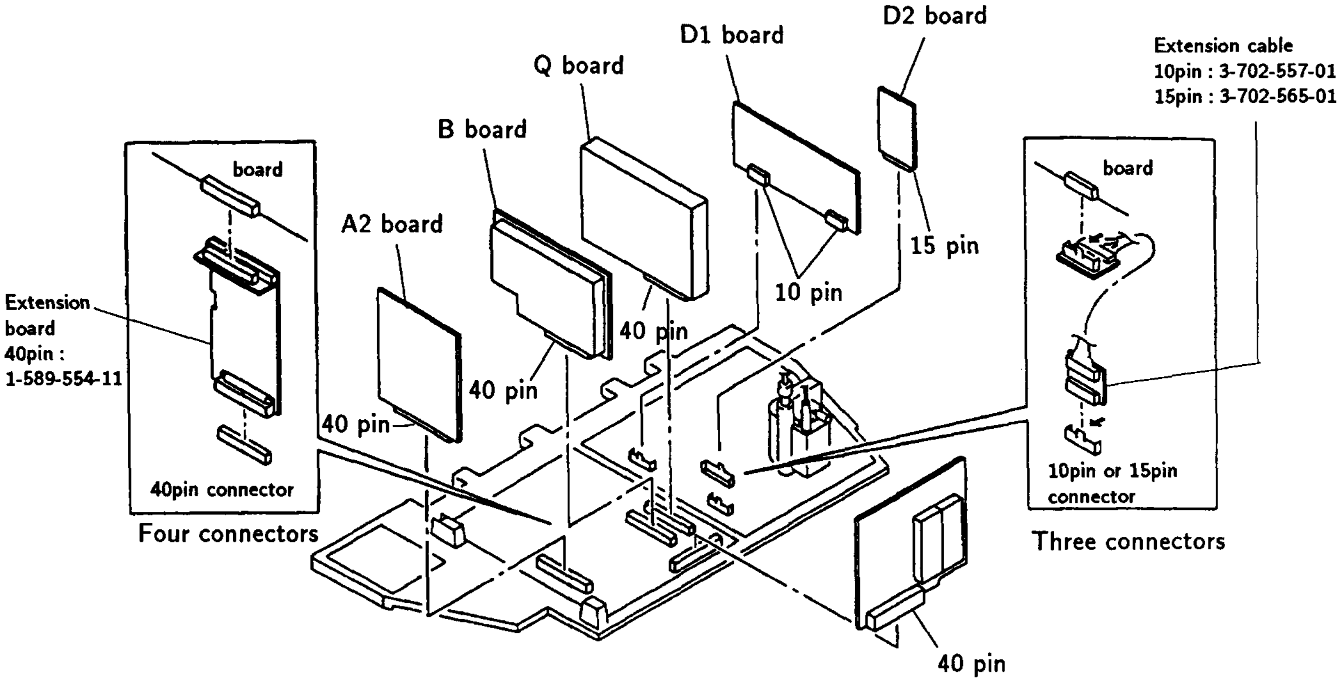
2-6. J BOARD REMOVAL


④ J bracket
⑤ Three screws (BVTP 3×12)
① One screw (BVTP 4×16)
⑥ J shield
⑧ J board
② Two claws
⑦ Two screws (BVTP 3×12)
③ Three claws

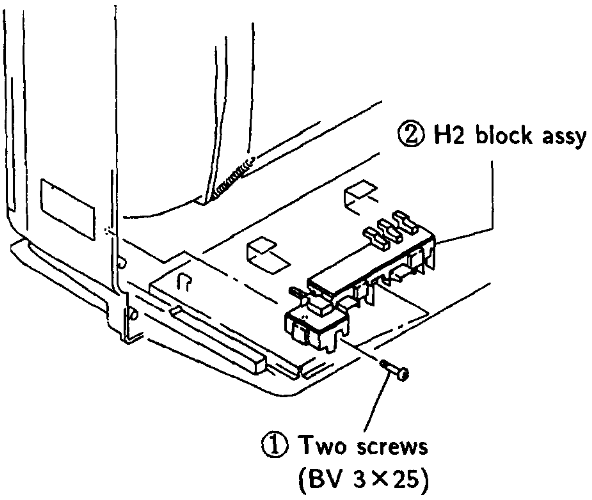
2-7. F1 AND A2 BOARDS REMOVAL


⑤ F1 bracket
③ One screw
(BVTP 3×12)
⑦ A2 board
④ Two claws
⑥ F1 board
① Two claws
② Splitter bracket

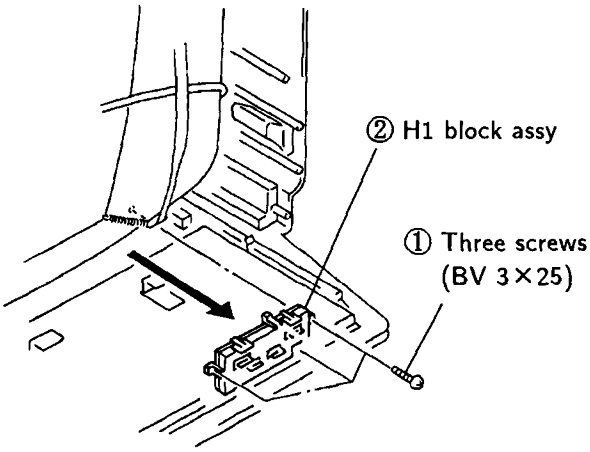
2-8. EXTENSION CABLE AND BOARD


D2 board
D1 board
Q board
B board
A2 board
Extension cable
10pin : 3-702-557-01
15pin : 3-702-565-01
board
Extension board
40pin :
1-589-554-11
40pin connector
Four connectors
15 pin
10 pin
40 pin
40 pin
40 pin
board
10pin or 15pin
connector
Three connectors
40 pin

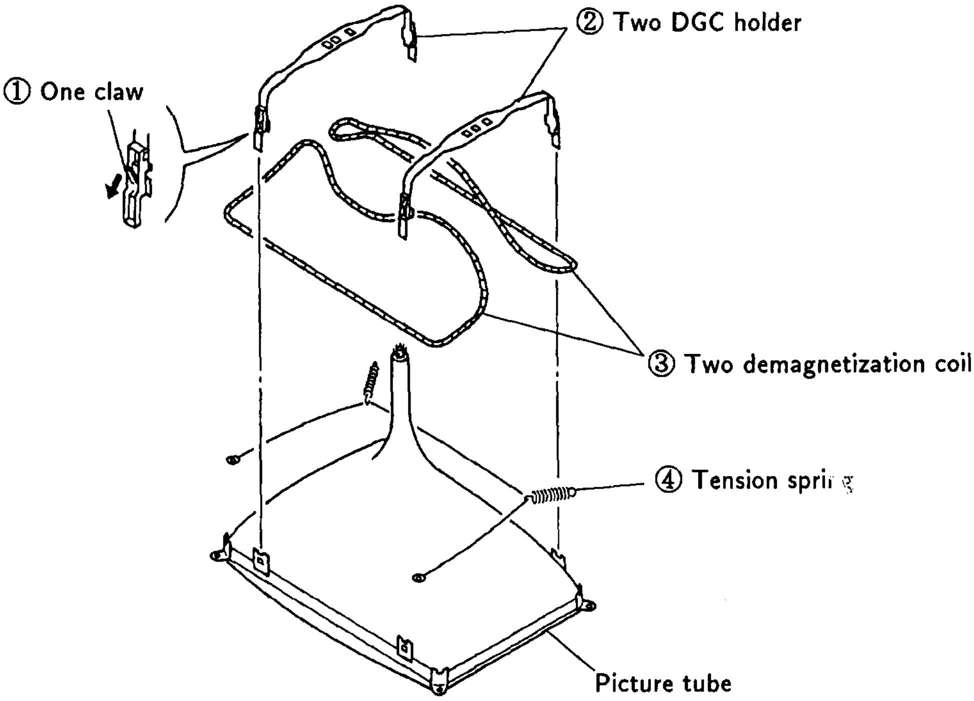
2-9. H2 BLOCK ASSY REMOVAL


② H2 block assy
① Two screws
(BV 3×25)

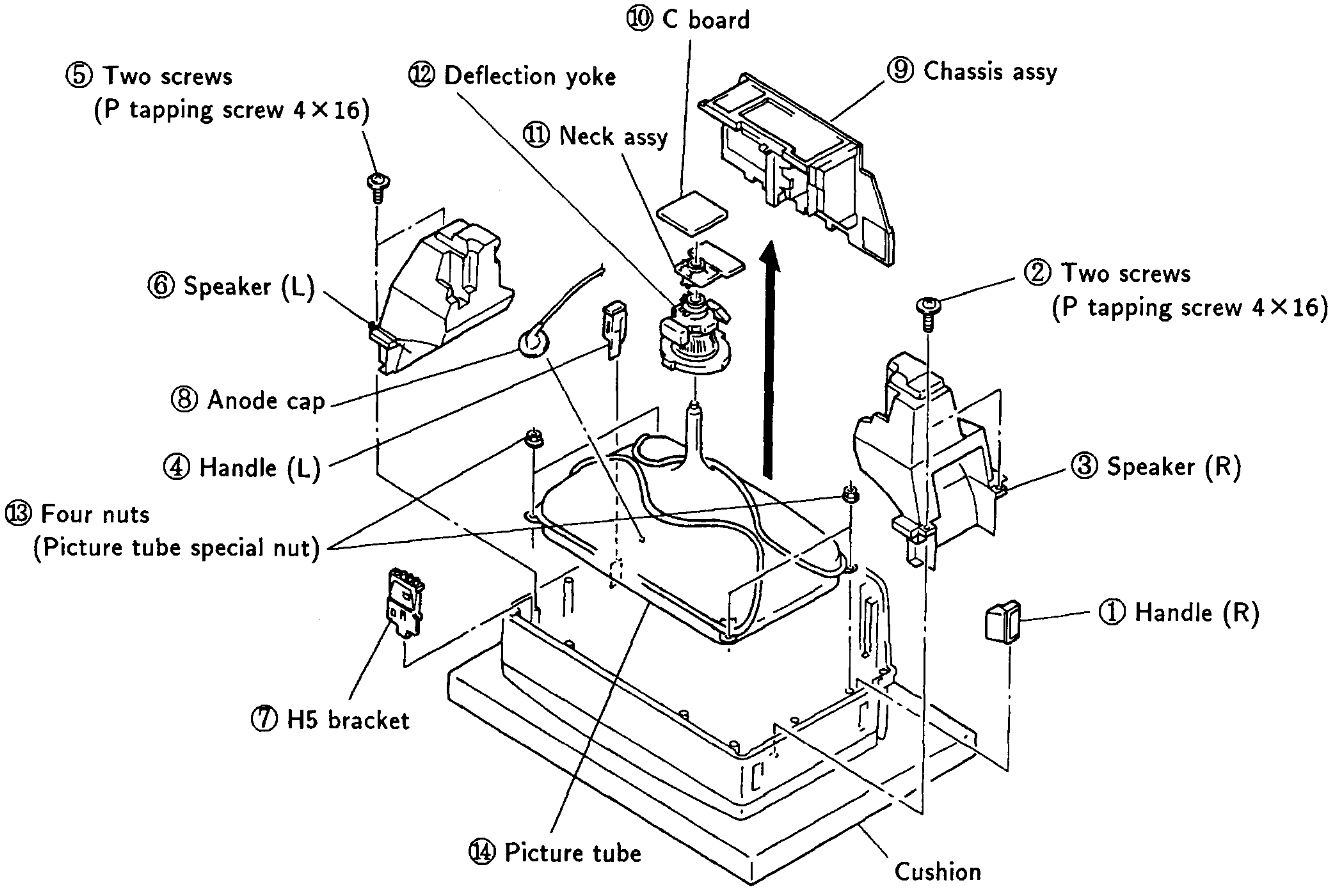
2-10. H1 BLOCK ASSY REMOVAL


② H1 block assy
① Three screws
(BV 3×25)

2-11. DEMAGNETIZATION COIL REMOVAL


① One claw
② Two DGC holder
③ Two demagnetization coil
④ Tension spring
Picture tube

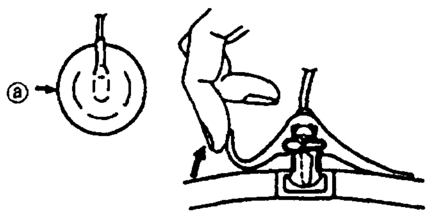
2-12. PICTURE TUBE REMOVAL


⑩ C board
⑤ Two screws
(P tapping screw 4×16)
⑫ Deflection yoke
⑨ Chassis assy
⑪ Neck assy
② Two screws
(P tapping screw 4×16)
⑥ Speaker (L)
⑧ Anode cap
④ Handle (L)
③ Speaker (R)
⑬ Four nuts
(Picture tube special nut)
① Handle (R)
⑦ H5 bracket
⑭ Picture tube
Cushion

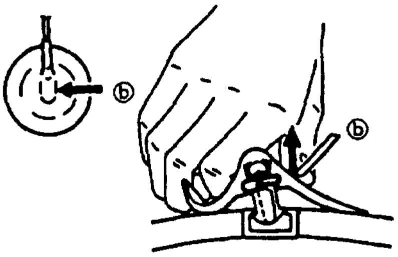
• REMOVAL OF ANODE-CAP

NOTE : Short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT chield or carbon painted on the CRT, after removing the anode.

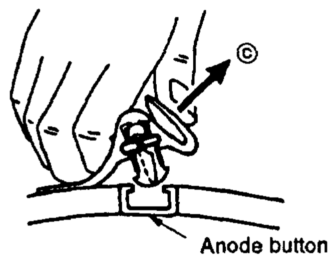
• REMOVING PROCEDURES



① Turn up one side of the rubber cap in the direction indicated by the arrow ⓐ.



② Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow ⓑ.


ⓒ
Anode button

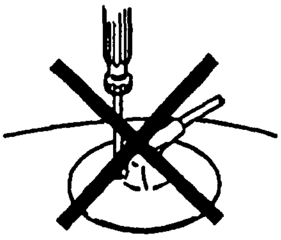
③ When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling up it in the direction of the arrow ⓒ.

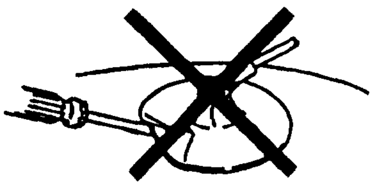
• HOW TO HANDLE AN ANODE-CAP

① Don't hurt the surface of anode-caps with sharp shaped material!

② Don't press the rubber too hard in order not to hurt inside of anode-caps!
A material fitting called as shatter-hook terminal is built in the rubber.

③ Don't turn the foot of rubber over hard!
The shatter-hook terminal will stick out or hurt the rubber.





SECTION 3
SET-UP ADJUSTMENTS

- The following adjustments should be made when a complete realignment is required or a new picture tube is installed.
- These adjustments should be performed with rated power supply voltage unless otherwise noted.

Controls and switch should be set as follows unless otherwise noted:

PICTURE control	RESET
BRIGHTNESS control	CENTER

Perform the adjustments in order as follows :

1. Beam Landing
2. Convergence
3. Focus
4. White Balance

Note : Test Equipment Required.

1. Color-bar/Pattern Generator
2. Degausser
3. Oscilloscope

3-1. BEAM LANDING

Preparations:

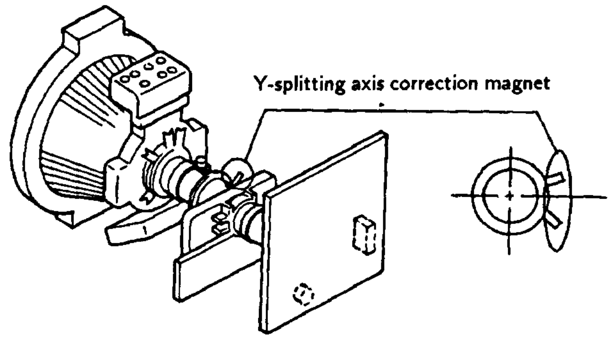
1. In order to reduce the influence of geomagnetism on the set's picture tube face it east or west.
2. Switch on the set's power and degauss with the degausser.

(1) Adjustment of Control Magnet for Y-Splitting Axis

1. Input a crosshatch signal with the pattern generator.
2. Picture control is minimum and brightness control is still normal.
3. Position the neck assy as shown in Fig.3-2.
4. Move the deflection yoke forward to touch the CRT and it stands up rightly.
5. Adjust the upper pin and the lower pin symmetrically by opening or closing the Y-splitting axis correction magnet on the neck assy.
6. Return the deflection yoke to original position.

(2) Landing

1. Input a full-white signal with the pattern generator. Maximize the picture setting and adjust the brightness setting for easy viewing.
2. Rough-adjust the focus, horizontal convergence.
3. Loosen the deflection yoke screws, align the purity adjustment knob to the central position. (See Fig.3-1.)
4. Switch the full-white signal to a mono-green signal.
5. Move the deflection yoke backward and adjust with the purity magnet so that the green is at the center and it aligns symmetrically. (See Fig.3-3.)
6. Move the deflection yoke forward and adjust so that entire screen is green.
7. Switch the raster signal to red, then to blue and verify the landing condition.
8. When the position of the deflection yoke has been decided, fasten the deflection yoke with the screws.
9. If the beam does not land correctly in all the corners, use a magnet to adjust it. (See Fig.3-4.)



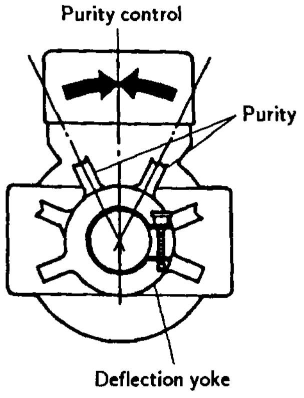
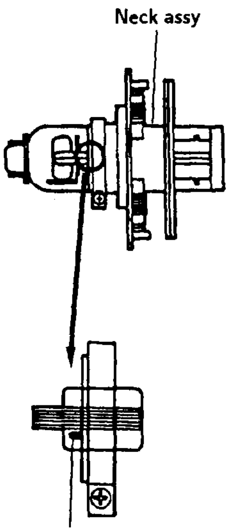


Fig.3-1.



Fit the bottom edge of the neck assy with the G3 hole edge.

Fig.3-2.

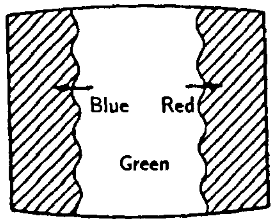


Fig.3-3.

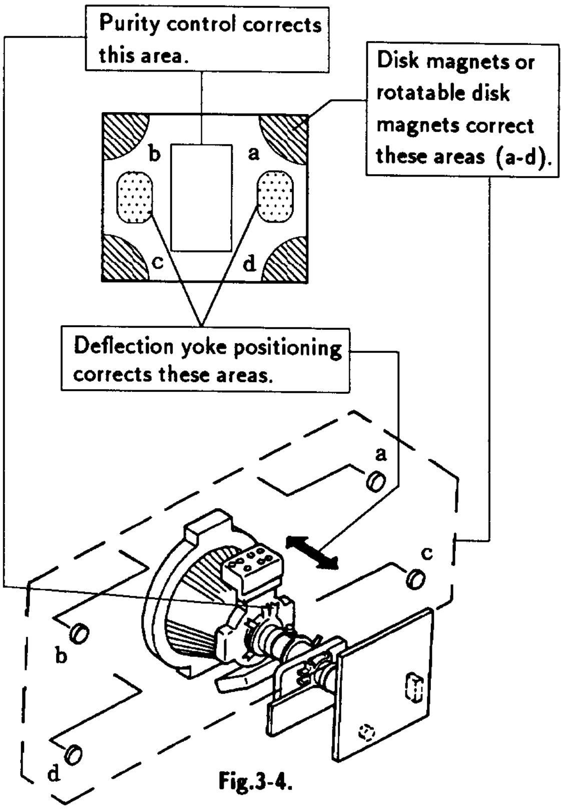

Purity control corrects this area.
Disk magnets or rotatable disk magnets correct these areas (a-d).
b
a
c
d
Deflection yoke positioning corrects these areas.
a
c
b
d

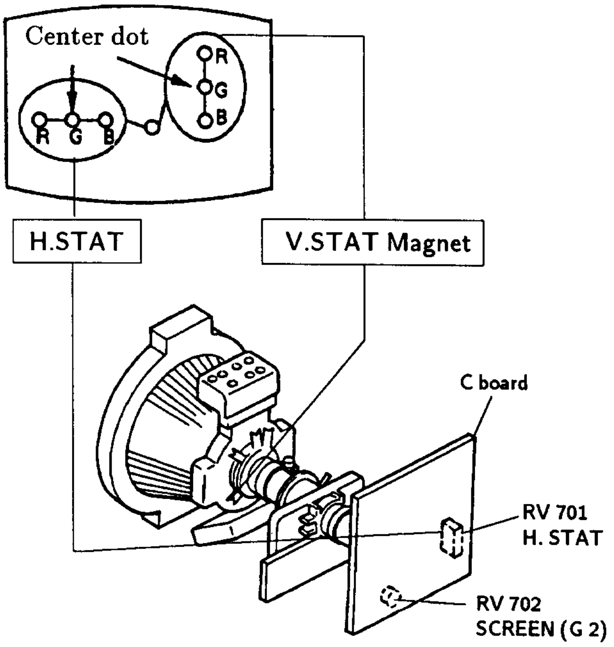
Fig.3-4.

3-2. CONVERGENCE

Preparation :

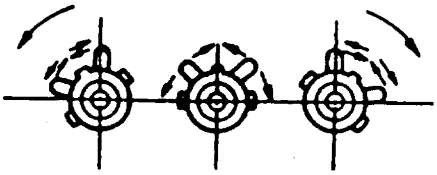
- Before starting this adjustment, adjust the focus, horizontal size, and vertical size.
- Minimize the brightness setting.
- Provide dot pattern.

(1) Horizontal and Vertical Static Convergence


Center dot
R
G
B
R
G
B
H.STAT
V.STAT Magnet
C board
RV 701
H. STAT
RV 702
SCREEN (G 2)

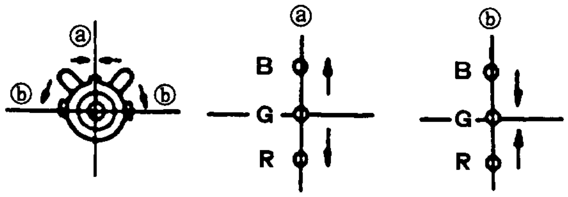
1. (Moving horizontally), adjust the H.STAT control so that the red, green, and blue points are on top of each other at the center of the screen.
2. (Moving vertically), adjust the V.STAT magnet so that the red, green, and blue points are on top of each other at the center of the screen.
3. If the H.STAT variable resistor cannot bring the red, green, and blue points together at the center of the screen, adjust the horizontal convergence with the H. STAT variable resistor and the V.STAT magnet in the manner given below. (In this case, the H.STAT variable resistor and the V.STAT magnet influence each other)

- Tilt the V.STAT magnet and adjust the static convergence by opening or closing the V.STAT magnet.

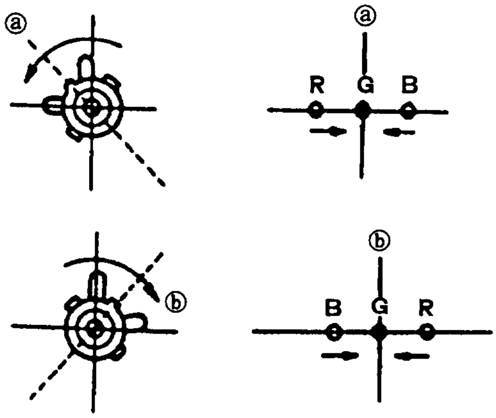


4. If the V.STAT magnet is moved in the direction of the ⓐ and ⓑ arrows, the red, green, and blue points move as shown below.

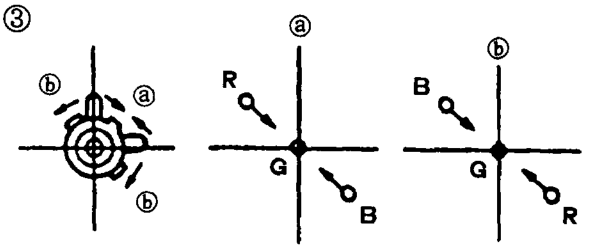
①



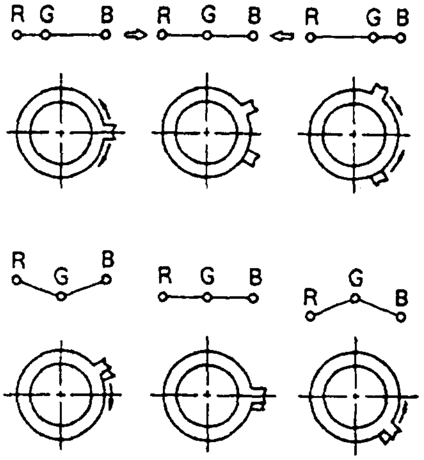
②



③

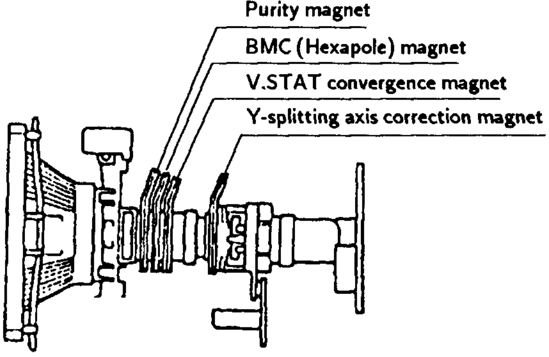


- Operation of BMC (Hexapole) Magnet

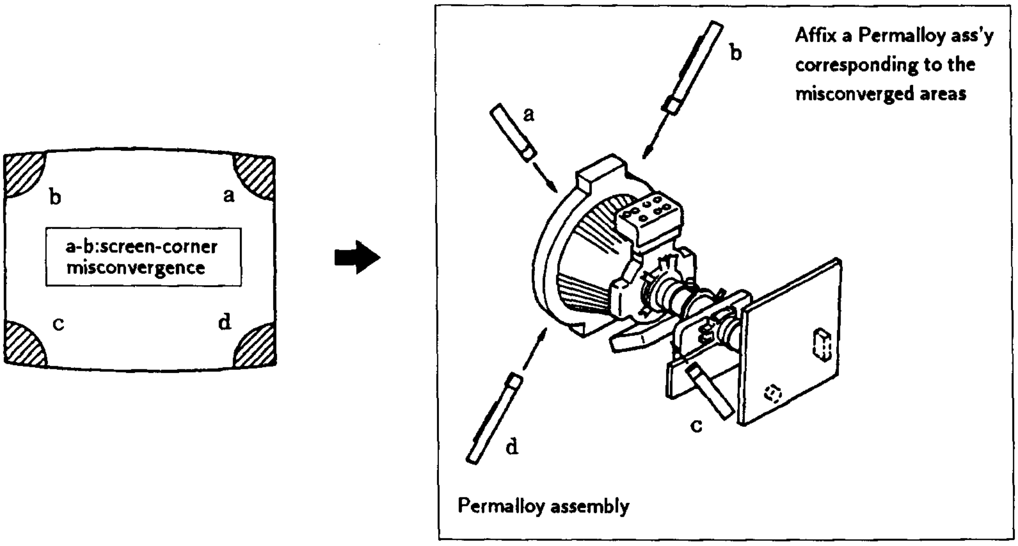

R G B
R G B
R G B
R G B
R G B
R G B

- The respective dot positions resulting from moving each magnet interact, so be sure to perform adjustment while tracking.
  Use the H.STAT VR to adjust the red, green, and blue dots so they coincide at the center of screen (by moving the dots in the horizontal direction).

Layout of each control


Purity magnet
BMC (Hexapole) magnet
V.STAT convergence magnet
Y-splitting axis correction magnet

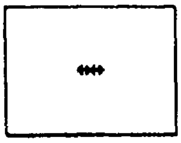
(2) Screen-corner Convergence


b
a
a-b:screen-corner misconvergence
c
d
b
a
Affix a Permalloy ass'y corresponding to the misconverged areas
c
d
Permalloy assembly

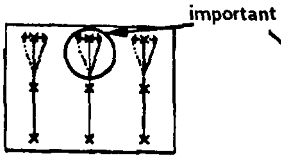
*Service adjustment to this model can be performod with the supplied remote commander RM-850.
(Refer to the SECTION 4 Electrical adjustment on how to enter service mode.)

Item number	Adj. Item	Data range	Standard DATA	Note	Device
			W5 W6 Z5 Z6 S5 S6 No/Fu5 No/Fu6 MP		
37	DCS	00~3F	1 F	DC Shift	(CXA 1526 P)
38	HAP	00~3F	1 F	H. Amp	(CXA 1526 P)
39	HTL	00~3F	1 F	H. Tilt	(CXA 1526 P)
3A	UYB	00~3F	1 F →All the same data of each mode.	Upper Y Bow	(CXA 1526 P)
3B	LYB	00~3F	1 F	Lower Y Bow	(CXA 1526 P)
3C	UCB	00~3F	1 F	Upper Corner Bow	(CXA 1526 P)
3D	UTL	00~3F	1 F	Upper Tilt	(CXA 1526 P)
3E	LCB	00~3F	1 F	Lower Corner Bow	(CXA 1526 P)
3F	LTL	00~3F	1 F	Lower Tilt	(CXA 1526 P)

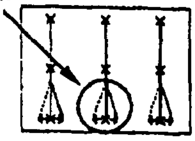
R.G.B.dots movement on the screen of the set



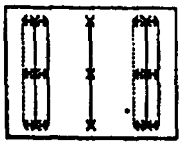
DC SHIFT
Fine adjustment of H.stat



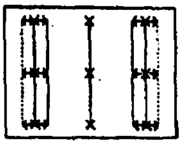
UPPER Y BOW
Adjustment of Y.BOW of the upper section of the screen.



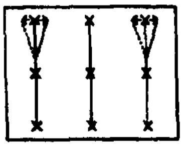
Standard LOWER Y BOW
Adjustment of Y.BOW of the lower section of the screen.



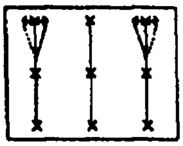
H.AMP
H.AMP adjustment



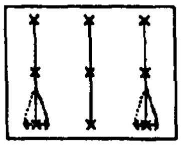
H.TILT
H.TILT adjustment



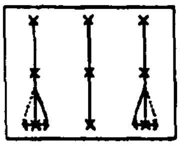
UPPER COR BOW
Adjustment of C.BOW of the upper section of the screen.



UPPER TILT
Adjustment of TILT of the upper section of the screen.



LOWER COR BOW
Adjustment of C.BOW of the lower section of the screen.



LOWER TILT
Adjustment of TILT of the lower section of the screen.

At this time, H.TILT, H.AMP, UPPER TILT, UPPER COR, BOW, LOWER TILT, and LOWER COR, BOW look like all the same, but the movement of the right and left dots are reverse in all the TILT system. (Pay attention to the dotted lines.)

*Service adjustment to this model can be performod with the supplied remote commander RM-850.
(Refer to the SECTION 4 Electrical adjustment on how to enter service mode.)

(3) Dynamic convergence adjustment

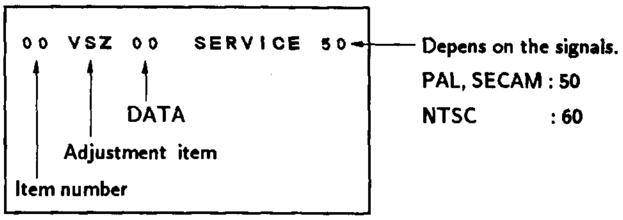
1. Adjust horizontal convergence located at the center position of the screen with H STAT VR.
2. Dynamic convergence adjustments are made with the RM-850 that comes with this unit.

Entering service mode

With the unit on standby
⇩
"DISPLAY"
⇩
"5"
⇩
"VOL (+)"
⇩
"POWER"

This operation sequence puts the unit into service mode.

The screen display



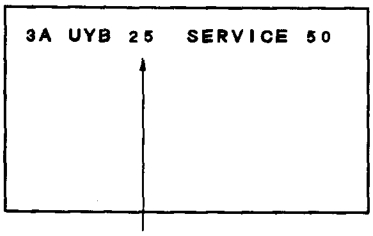
00 VSZ 00 SERVICE 50

"1", "4"	Raise/lower the service item number
"3", "6"	Raise/lower the data
"MUTE"	Writes
"0"	Executes the writing

Item Number 3A

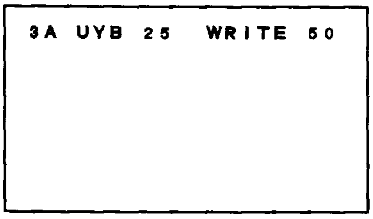
This explanation uses UYBOW as an example.

1. Select 3A UYBOW with the "1" and "4" buttons.
2. Raise/lower the data with the "3" and "6" buttons.
3. Select the optimum staste.
4. Write with the MUTE button. (The display changes to WRITE.)
5. Execute the writing with the "0" button.



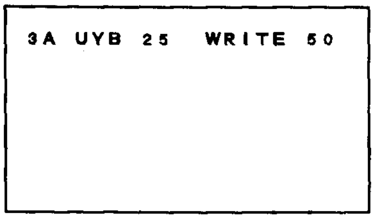
3A UYB 25 SERVICE 50

Adjusted with "3" and "6" buttons



3A UYB 25 WRITE 50

Written with "MUTE"



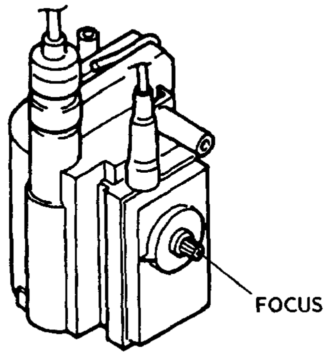
3A UYB 25 WRITE 50

Write excuted with "0"

"1", "4"	Select the adjustment item.
↓	
"3", "6"	Raise/lower the data.
↓	
"MUTE"	Writes.
↓	
"0"	Executes the writing.

3-3. FOCUS ADJUSTMENT

Adjust FOCUS control on the flyback transformer for a best focus.



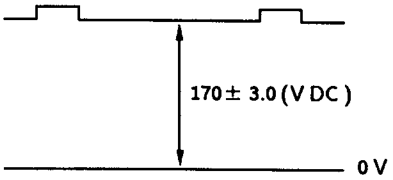
FLYBACK TRANSFORMER (T503)

3-4. G2 (SCREEN), SUB PICTURE AND WHITE BALANCE ADJUSTMENTS

*Service adjustment to this model can be performod with the supplied remote commander RM-850.
(Refer to the SECTION 4 Electrical adjustment on how to enter service mode.)

(1) G2 (SCREEN) ADJUSTMENT (RV701)

1. Set the PICTURE and BRIGHTNESS to normal.
2. Put to VIDEO input mode without signals.
3. Set to Service Mode. (To turn off Blue Black.)
4. Change BOF data of the item number "1A" from "00" to "01" .
5. Connect R, G, and B of the C board cathode to the oscilloscope.
   Adjust R-G, G-G, B-G, data of the item number "0E ","0F ", "10 " to the volue below.



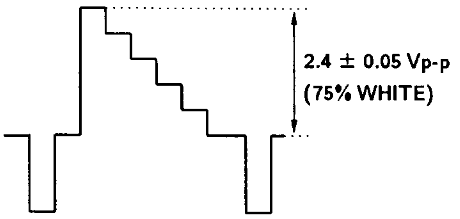
6. Adjust G2 (RV701) volume to make the screen slightly bright.

(2) SUB PICTURE ADJUSTMENT (R-G)

1. Receive a NTSC color-bar (75% WHITE) to set to FULL mode.
2. Set the conditions as follows.

SHARPNESS ·········	minimum	
PICTURE ·········	maximum	
COLOR ·········	minimum	
BRIGHT ·········	50%	
SUB BRIGHT ·········	1F	DATA
SUB PICTURE ·········	18	

3. Connect an oscilloscope to the pin⑥ (R OUT) of CN 508, D board.
4. Set to Service Mode.
5. Select 0F (G-G) and 10 (B-G) with [1] and [4] of the commander and set the data "00" with [3] and [6].
6. Select 0E (R-G) with [1] and [4], and adjust [3] and [6] to get 2.4±0.05 Vp-p level.
7. Press [MUTING] → [0] of the commander to write the data.

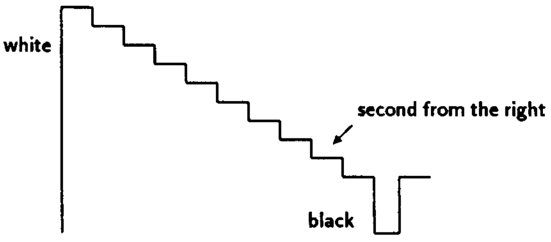


(3) WHITE BALANCE ADJUSTMENTS

1. Input an entire white signal.
2. Set to service mode.
3. Set the PICTURE to maximum.
4. Select G-G (0F) and B-G (10) with [1] and [4], and adjust the level with [3] and [6] for the best white balance.
5. Set the PICTURE to minimum.
6. Adjust the level with RV705 (B.BKG) and RV704 (G.BKG) for the best white balance.
7. Write into the memory by pressing [MUTE] → then [0].

(4) SUB BRIGHT ADJUSTMENT

1. Set to service mode.
2. Input a staircase signal of black and white from the pattern generator.
3. BRIGHTNESS ··· 50%
   PICTURE ········· minimum
4. Select SBT with [1] and [4], and adjust SBT (24) level with [3] and [6] so that the stripe second from the right is dimly lit.



SECTION 4
CIRCUIT ADJUSTMENTS

4-1. ADJUSTMENTS WITH COMMANDER

Service adjustments are made with the RM-850 that comes with this unit.

Entering service mode

With the unit on standby

↓

"DISPLAY"

↓

"5"

↓

"VOL (+)"

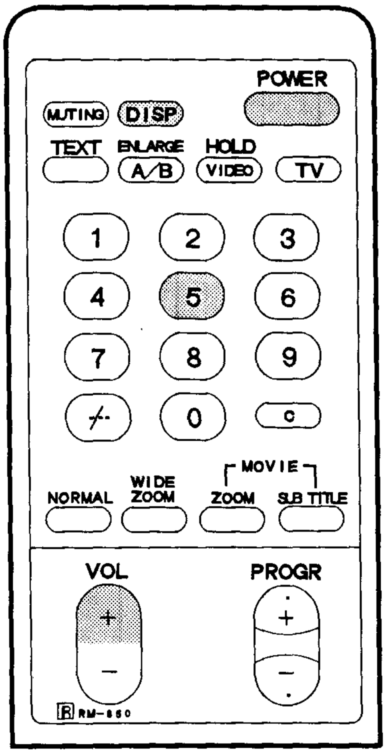
↓

"POWER"

This operation sequence puts the unit into servise mode.

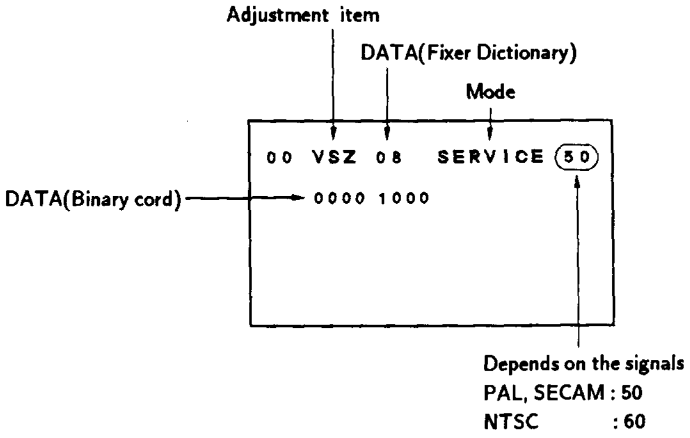
"1", "4"	Raise/lower the service item number
"3", "6"	Raise/lower the data
"MUTE"	Writes
"0"	Executes the writing

"7", "0"	The data all becomes the values in memory
"8", "0"	User control all goes to the standard state
"5", "0"	Service data initialization (Besure not to use usually.)
"DISP", "0"	Write 50Hz adjustment data to 60Hz, or vice versa.
"2", "0"	Data copy of all WIDE modes.


POWER
MUTING
DISP
TEXT
ENLARGE
HOLD
A/B
VIDEO
TV
1
2
3
4
5
6
7
8
9
-/--
0
C
MOVIE
WIDE
NORMAL
ZOOM
ZOOM
SUB TITLE
VOL
PROGR
+
−
+
−
RM-850

RM-850

The screen display is :


Adjustment item
DATA(Fixer Dictionary)
Mode
00 VSZ 08 SERVICE 50
DATA(Binary cord)
0000 1000
Depends on the signals
PAL, SECAM : 50
NTSC : 60

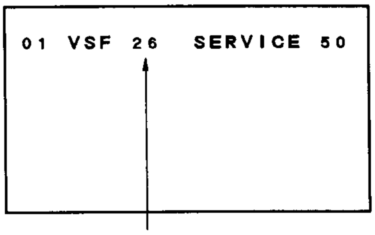
"1", "4"	Select the adjustment item.
↓	
"3", "6"	Raise/lower the data.
↓	
"MUTE"	Writes
↓	
"0"	Executes the writing.

4-2. ADJUSTMENT METHOD

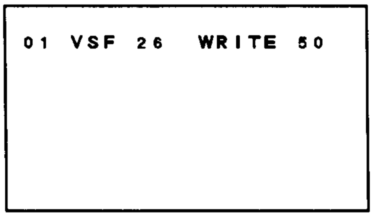
Item Number 01

This explanation uses V-SHFT as an example.

1. Select 01 V-SHFT with the "1" and "4" buttons.
2. Raise/lower the data with the "3" and "6" buttons.
3. Select the optimum state. (The standard setting is for PAL reception.)
4. Write with the MUTE button. (The display changes to WRITE.)
5. Execute the writing with the "0" button.

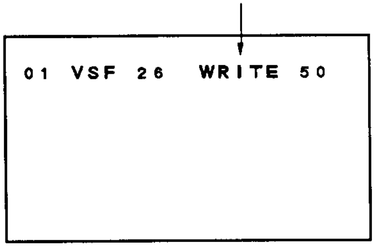


Adjusted with "3" and "6" buttons



Written with "MUTE"

The display returns to a SERVICE.



Write excuted with "0"

Item number	Adjustment Item	※1 Data range	※2 Standard DATA	Note	Device
			W5 ⋮ W6 ⋮ Z5 ⋮ Z6 ⋮ S5 ⋮ S6 No/Fu5 ⋮ No/Fu6 ⋮ MP		
00	VSZ	00~3F	30	V-Size	CXD2018Q
01	VSF	00~3F	26	V-Shift	
02	SCR	00~0F	04	S-Correction	
03	VLN	00~0F	09	V-Linearity	
04	HSZ	00~3F	2A	H-Size	
05	PAP	00~3F	20	Pin-Amp	
06	TLT	00~1F	10	TILT	
			→ All the same data of each mode.		
07	UCP	00~0F	07	Upper Corner Pin	
08	LCP	00~0F	06	Lower Corner Pin	
09	VBW	00~0F	08	V-Bow	
0A	VAG	00~0F	08	V-Angle	
0B	HVV	00~07	05	HV-Comp-V	
0C	HVH	00~07	00	HV-Comp-H	
			W5 ⋮ W6 ⋮ Z5 ⋮ Z6 ⋮ S5 ⋮ S6 N5 ⋮ N6 ⋮ F5 ⋮ F6 ⋮ MP		
0D	HSH	00~3F	20 → All the same data of each mode.	H Shift	

Note : ※1 Data renge area. 00-09,0 A-0 F,10-19,1 A-1 F,20-29,2 A-2 F,30-39,3 A-3 F.

※2 Standard Data. • Those are the standard data values written on the microprocessor.There fore the data values of the modes are respectively stored in the memory.

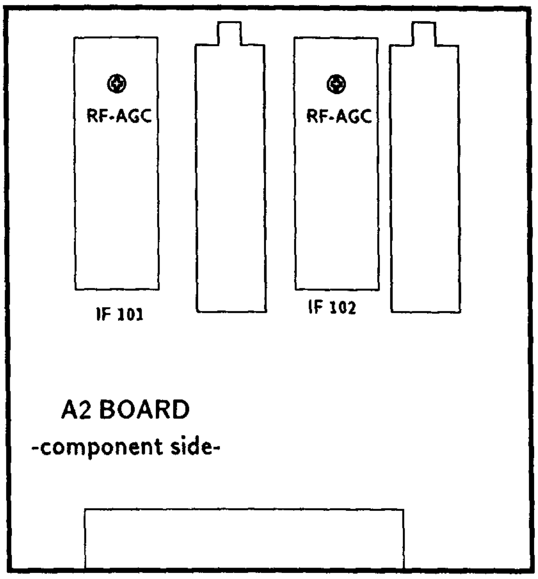
• In case of a device replacement,adjustment by rewriting the data value is necessary for some items afterwards.

Item number	Adjustment Item	Data range	Standard DATA W5 W6 Z5 Z6 S5 S6 N5 N6 F5 F6 MP	Note	Device
0E	R-G	00~3F	1F	Red Gain	TDA4780/ TDA4686
0F	G-G	00~3F	1F	Green Gain	
10	B-G	00~3F	1F	Blue Gain	
11	RLR	00~3F	1F	Red Level Ref.	
12	GLR	00~3F	1F	Green Level Ref.	
13	BLR	00~3F	1F	Blue Level Ref.	
14	PDL	00~3F	29	Peak Drive Limit	
15	GMM	00~3F	1F	γ	
16	SC5	00~01	01	Sand Castle 5 V	
17	DOF	00~01	00	Delay Lead Edge	
18	HD	00~01	00 → All the same data of each mode.	HDTV/Progressive	
19	FLB	00~01	00	Screen Black	
1A	BOF	00~01	00	Auto Cut-OFF OFF	
1B	ADB	00~01	01	Adaptive Black	
1C	YH1	00~01	00	Y High Level	
1D	MD2	00~01	00	Modus 2	
1E	BLS	00~01	00	BLST	
1F	YEX	00~01	01	Y Exclusive Hue	
20	RLC	00~01	00	Rel. to CutOff	
21	TCP	00~01	01	Time Const. Peak	
			Wide Zoom, Zoom, Subtitle, Full, MP Normal		
22	SPI	00~1F	0F	Sub Picture	
23	SCO	00~3F	1F	Sub Color	
24	SBT	00~7F	1F → All the same data of each mode.	Sub Bright	
25	SHU	00~1F	0F	Sub Hue	TDA9145
26	SHS	00~1F	0F	Sub Hue S&PinP	
27	CV	00~01	00	Forced CVBS	
28	FON	00~01	01	Frame ON	SDA9188-3X
29	DLY	00~07	00	Sel.Delay LL 3 P	
2A	P-V	00~0F	08	V read delay	
2B	PVS	00~07	01	PIP-V offset	
2C	P-H	00~3F	0A	H read delay	
2D	PHS	00~0F	02	PIP-H offset	
2E	CTR	00~0F	09	Contrast	
2F	DVI	00~1F	07 → All the same data of each mode.	Set Delay VSI	
30	DVP	00~1F	0F	Delay VSP Pulse	
31	BRT	00~0F	05	Frame Brightness	
32	PLL	00~01	00	PLL Time Const.	
33	9V5	00~07	03	Multi PiP V 50 Hz	
34	9V6	00~07	03	Multi PiP V 60 Hz	
35	9H5	00~07	03	Multi PiP H 50 Hz	
36	9H6	00~07	03	Multi PiP H 60 Hz	
			W5 W6 Z5 Z6 S5 S6 No/Fu5 No/Fu6 MP		
37	DCS	00~3F	1F	DC Shift	CXA1526P
38	HAP	00~3F	1F	H.Amp	
39	HTL	00~3F	1F	H.Tilt	
3A	UYB	00~3F	1F	Upper Y bow	
3B	LYB	00~3F	1F	Lower Y Bow	
3C	UCB	00~3F	1F → All the same data of each mode.	Upper Corner Bow	
3D	UTL	00~3F	1F	Upper Tilt	
3E	LCB	00~3F	1F	Lower Corner Bow	
3F	LTL	00~3F	1F	Lower Tilt	

Item number	Adjustment Item	Data range	Standard DATA	Note	Device
			W5 : W6 : Z5 : Z6 : S5 S6 : N5 : N6 : F5 : F6		
40	107	00~01	00	Set TMS4C1070	IPQ V3, 4 (F/F)
41	P27	00~01	00	PLLMID Port $P2_7$	
42	LFR	00~01	01	LFR ON/OFF	
43	HWE	00~0F	0B → All the same data of each mode.	HWE1 Line Delay	
44	NR	00~03	01	Noise Reduction	
45	STP	00~01	00	Still Picture	
			W5 : W6 : Z5 : Z6 : S5 S6 : No/Fu 5 : No/Fu 6		
46	VWD	00~3F	Invalid : 1 A : Invalid	Scroll	
47	Y-V	00~FF	00	Y Value	
48	UVV	00~FF	00	UV Value	
49	TXH	00~FF	05	Text H Position	TPU3040
4A	TXV	00~3F	16 → All the same data of each mode.	Text V Position	
4B	VSP	00~FF	3B	WST Layer V Stop	(Text)
4C	BSP	00~FF	3D	Blanking Stop	
4D	BST	00~FF	35	Blanking Start	
4E	QSF	00~1F	01	ACQ Soft Slicer	
4F	A7F	00~FF	0A	Address 7FH Data	
50	QDT	00~3F	0D	ACQ Data Slicer	
51	CST	00~FF	00	Clamping Start	
52	CSP	00~FF	50	Clamping Stop	
53	FAW	00~FF	0A	NICAM FAW Thresh	MSP3410
54	CCT	00~FF	0A	NICAM Error Bit	
55	WGO	00~FF	0A	W.G.	(Audio,
56	WGS	00~FF	15	W.G.Stereo cut point	Stereo)
57	WGT	00~FF	50	W.G. timer	
58	WGB	00~FF	EA	W.G.Bilin cut point	
59	ACG	00~01	01	AGC Auto/Const.	
5A	CDB	00~7F	50	AGC Gain Const.	
5B	FMP	00~7F	24	FM Mono Prescale	
5C	WGP	00~7F	3C → All the same data of each mode.	W.G. Prescale	
5D	NIP	00~7F	7F	NICAM Prescale	
5E	CRM	00~01	00	Carrier Mute	
5F	ACO	00~01	01	Audio Clock Out	
60	OSH	00~3F	06	OSD Position H	CXP85340A
61	ODL	00~FF	10	Power ON Delay	
62	BLU	00~01	01	Blue Back	
63	ROS	00~3F	3F	N/S User Step	
64	MUT	00~01	01	No Sync. Mute	
65	DID	00~01	00	disable Degauss	
66	DWZ	00~01	00	User Last Wide	
67	OP0	00~FF	6C	Option 0	
68	OP1	00~FF	01	Option 1	

Note :
- W5 : Wide Zoom 50Hz
- W6 : Wide Zoom 60Hz
- Z5 : Zoom 50Hz
- Z6 : Zoom 60Hz
- S5 : Subtitle50Hz
- S6 : Subtitle60Hz
- N5 : Normal 50Hz
- N6 : Normal 60Hz
- F5 : Full 50Hz
- F6 : Full 60Hz
- MP : Multi PinP

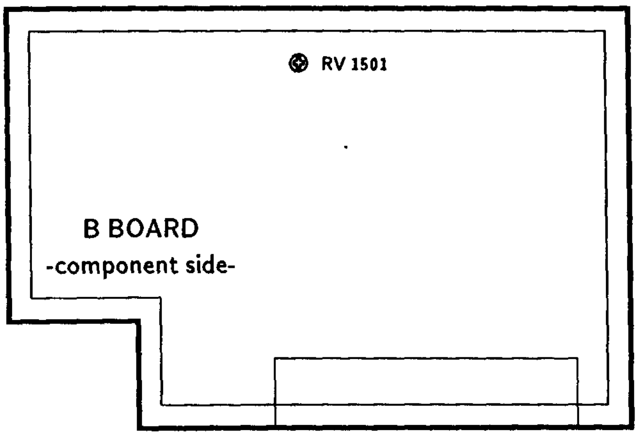
4-3. A2 BOARD ADJUSTMENT


RF-AGC
RF-AGC
IF 101
IF 102
A2 BOARD
-component side-

AGC ADJUSTMENT (IF BLOCK)

1. Receive an off-air signal.
2. Adjust the AGC VR (IF101) so that there is no snow noise and cross-modulation.
3. Set to PIP mode. (only 32 inch)
4. Receive an off-air signal with the sub picture.
5. Adjust the AGC VR (IF102) so that there is no snow noise and cross-modulation.

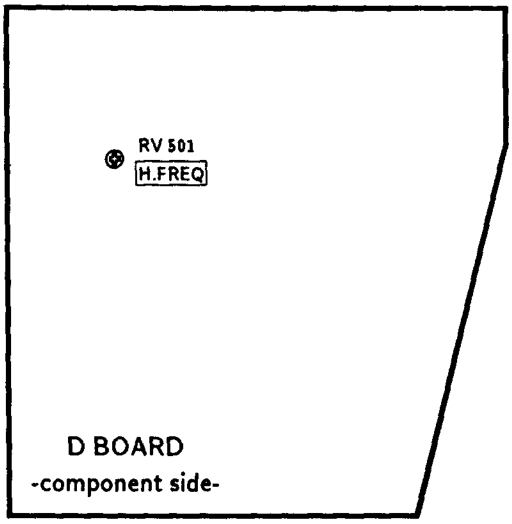
4-4. B BOARD ADJUSTMENT


RV 1501
B BOARD
-component side-

SCP F0 ADJUSTMENT (RV1501)

1. Receive a PAL color-bar signal.
2. Connect an oscilloscope to the pin ⑧ of IC501.
3. Adjust RV1501 for 2.8~2.9V.

4-5. D BOARD ADJUSTMENT


RV 501
H.FREQ
D BOARD
-component side-

H. FREQ ADJUSTMENT (RV501)

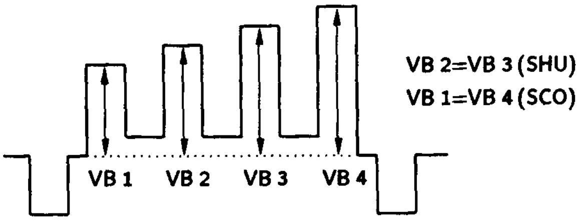
1. Receive a PAL color-bar signal.
2. Short the ground and pin ① of IC502.
3. Connect a frequency counter to the pin ⑫ of IC502.
4. Adjust RV501 for 31.4±0.1 kHz.
5. Disconnect a jumper wire from IC502.

SUB HUE, SUB COLOR ADJUSTMENT (SHU, SCO)

1. Receive a NTSC color-bar to set to FULL mode.
2. Set the conditions as follows.

PICTURE ········· 80%
COLOR ········· 50%
HUE ········· 50%

3. Connect an oscilloscope to the pin⑦ (B OUT) of CN508, D board.
4. Set to Service Mode.
5. Select 25 (SHU) and 23 (SCO) with 1 and 4, and adjust 3 and 6 to get VB2=VB3 and VB1=VB4.
6. Press MUTING → 0 of the commander to write the data.

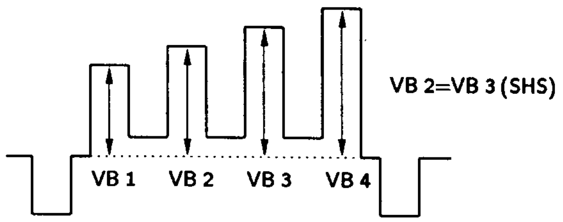

VB 2=VB 3 (SHU)
VB 1=VB 4 (SCO)
VB 1
VB 2
VB 3
VB 4

SUB HUE S ADJUSTMENT (SHS)

1. Receive a S video NTSC color-bar to set to FULL mode.
2. Set the conditions as follows.

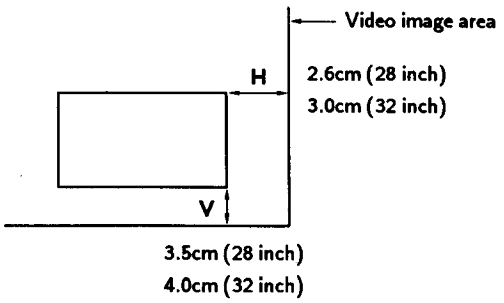
PICTURE ·········	80%
COLOR ·········	50%
HUE ·········	50%

3. Connect an oscilloscope to the pin⑦ (B OUT) of CN 508, D board.
4. Set to Service Mode.
5. Select 26 (SHS) with 1 and 4, and adjust 3 and 6 to make VB2=VB3.
6. Press MUTING → 0 of the commander to write the data.



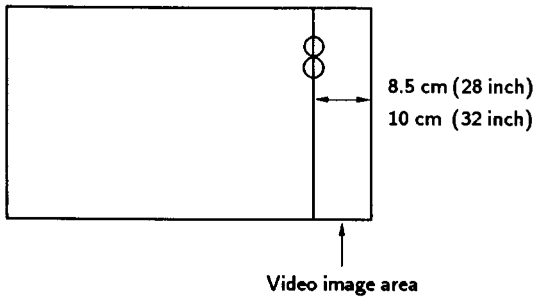
WINDOW PICTURE POSITION ADJUSTMENT (PVS, PHS)

1. Receive a PAL SP color-bar to set to FULL mode.
2. Set to Service Mode.
3. Press MENU button of the commander for P in P mode. (RIGHT, LOWER position)
4. Select 2A (P-V) or 2B (PVS) and 2C (P-H) or 2D (PHS) with 1 and 4 .
   Then adjust them respectively, with 3 and 4, to 3.5 cm (28 inch) or 4.0 cm (32 inch), and 2.6 cm (28 inch) or 3.0 cm (32 inch).
5. Press MUTING → 0 of the commander to write the data.



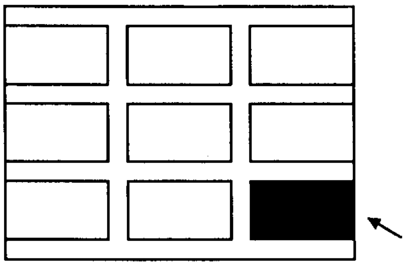
PROGRAM POSITION ADJUSTMENT (OSH)

1. Receive a PAL color-bar to set to FULL mode.
2. Set to Service Mode.
3. Press DISP button of the commander.
4. Select 60 (OSH) with 1 and 4 of the commander, and set the position as shown below with 3 and 6 .
5. Press MUTING → 0 of the commander to write the data.



MULTI PIP ADJUSTMENT (9V5, 9V6, 9H5, 9H6)

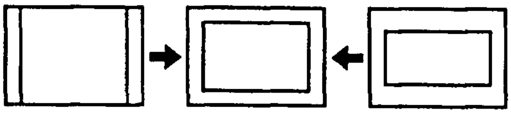
1. Receive a NTSC monoscope to set to FULL mode.
2. Set to Service Mode.
3. Press MENU button of the commander for STROBE mode. (RIGHT, LOWER position)
4. Select 34 (9V6) and 36 (9H6) with 1 and 4, and adjust 3 and 6 to set the monosco pattern at the frame center.
5. Press MUTING → 0 of the commander to write the data.
6. Receive a PAL monoscope to set to FULL mode.
7. Press MENU button of the commander for STROBE mode. (RIGHT, LOWER position)
8. Select 33 (9V5) and 35 (9H5) with 1 and 4, and adjust 3 and 6 to set the monosco pattern at the frame center.
9. Press MUTING → 0 of the commander to write the data.



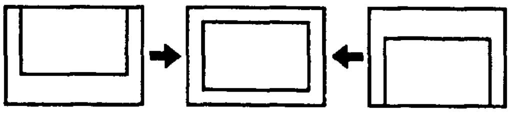
4-6. PICTURE DISTORTION ADJUSTMENT

Item Numbers 23-2D

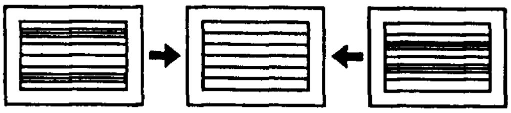
00 VSZ (V SIZE)



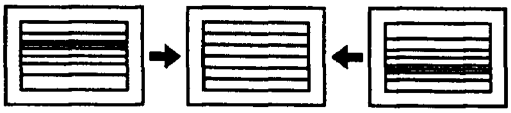
01 VSF (V SHIFT)



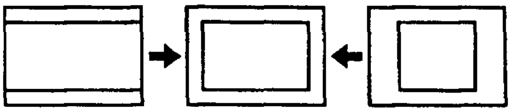
02 SCR (VERTICAL S correction)



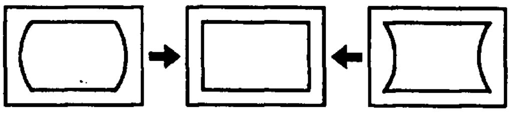
03 VLN (V LINEARITY)



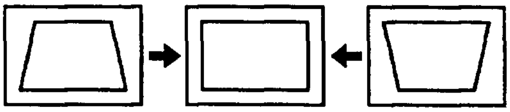
04 HSZ (H SIZE)



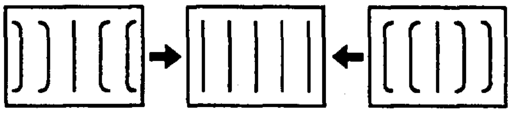
05 PAP (PIN AMP)



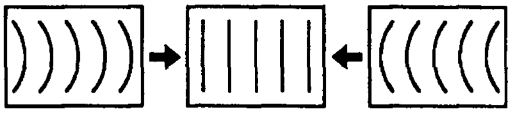
06 TLT (TILT)



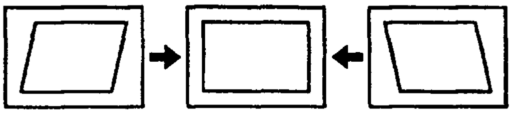
07 UCP (Upper Corner Pin)
08 LCP (Lower Corner Pin)

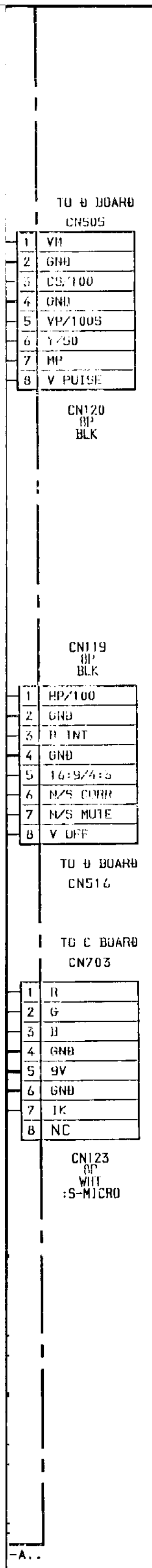


09 VBW (V-BOW)

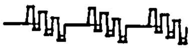
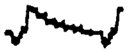
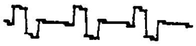
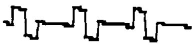
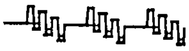
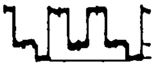
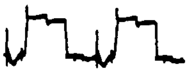
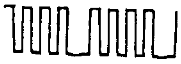
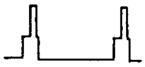
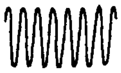
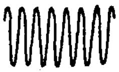
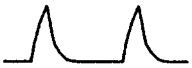
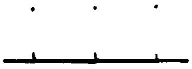
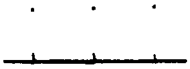
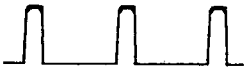
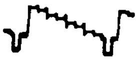
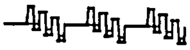
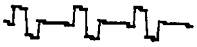
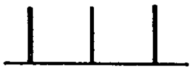
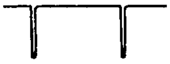
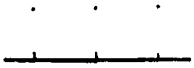
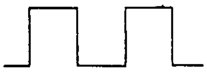
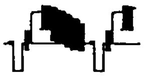
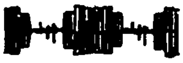
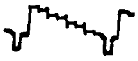
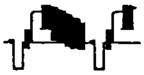
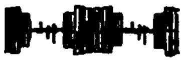
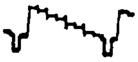
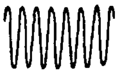


0A VAG (V-ANGLE)



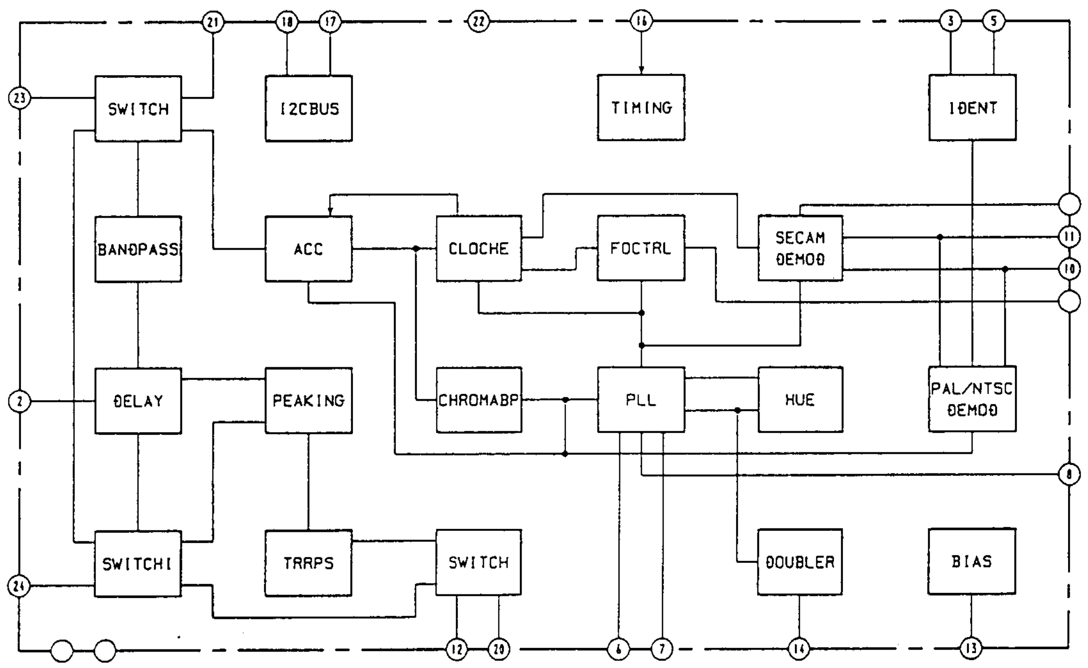

TO B BOARD
CN505
1 VM
2 GND
3 CS/100
4 GND
5 VP/100S
6 Y/50
7 HP
8 V PULSE
CN120
8P
BLK
CN119
8P
BLK
1 HP/100
2 GND
3 H INT
4 GND
5 16:9/4:3
6 N/S CORR
7 N/S MUTE
8 V OFF
TO B BOARD
CN516
TO C BOARD
CN703
1 R
2 G
3 B
4 GND
5 9V
6 GND
7 IK
8 NC
CN123
8P
WHT
:S-MICRO
A..

• A BOARD WAVEFORMS

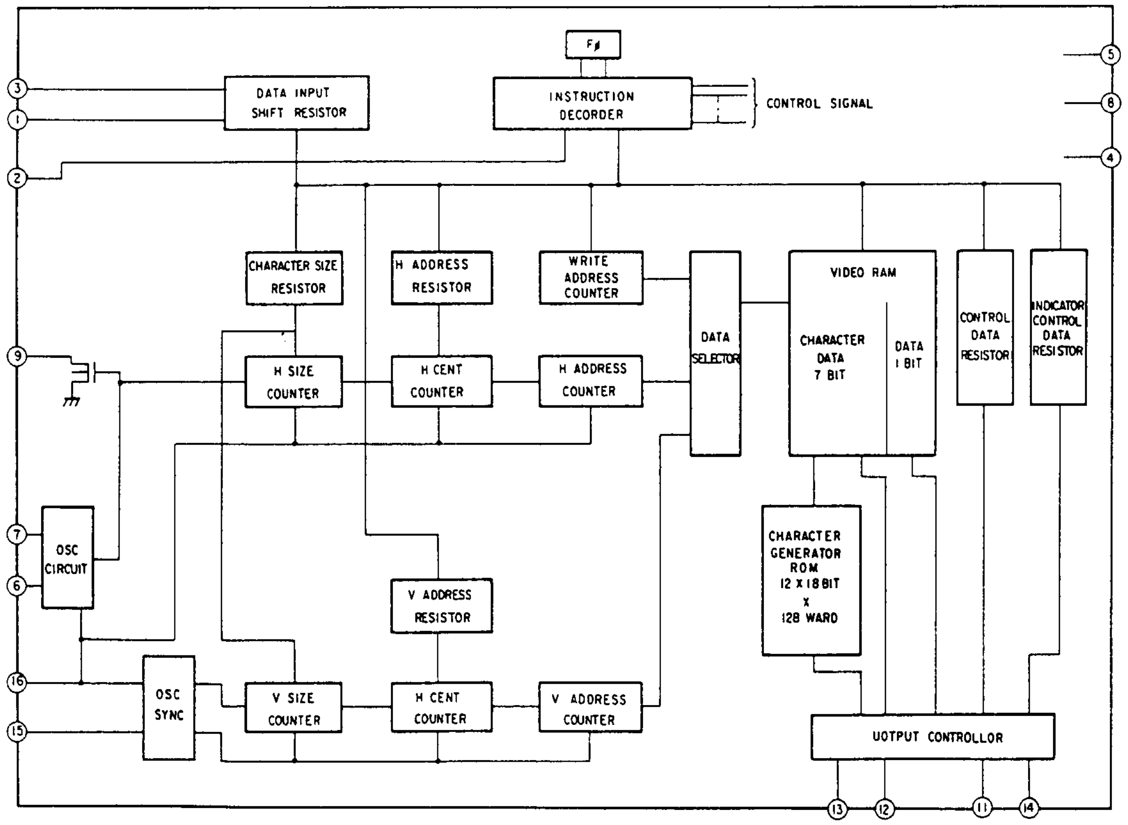
①  1.4 Vp-p (H)	②  0.4 Vp-p (H)	③  1.2 Vp-p (H)
④  1.2 Vp-p (H)	⑤  1.4 Vp-p (H)	⑥  3.2 Vp-p (H)
⑦  3.2 Vp-p (H)	⑧  3.0 Vp-p (H)	⑨  9.5 Vp-p (H)
⑩  3.8 Vp-p(18.432MHz)	⑪  5.0 Vp-p (8MHz)	⑫  6.5 Vp-p (H)
⑬  4.8 Vp-p (V)	⑭  4.8 Vp-p (V)	⑮  6.0 Vp-p (H)
⑯  1.8 Vp-p (H)	⑰  1.2 Vp-p (H)	⑱  1.1 Vp-p (H)
⑲  4.8 Vp-p (V)	⑳  3.2 Vp-p (H)	㉑  5.0 Vp-p (V)
㉒  5.0 Vp-p (H)	㉓  1.8 Vp-p (H)	㉔  1.1 Vp-p (H)
㉕  2.0 Vp-p (H)	㉖  1.8 Vp-p (H)	㉗  1.2 Vp-p (H)
㉘  1.9 Vp-p (H)	㉙  1.7 Vp-p (20.25MHz)	

KV-W32SN11
RM-850

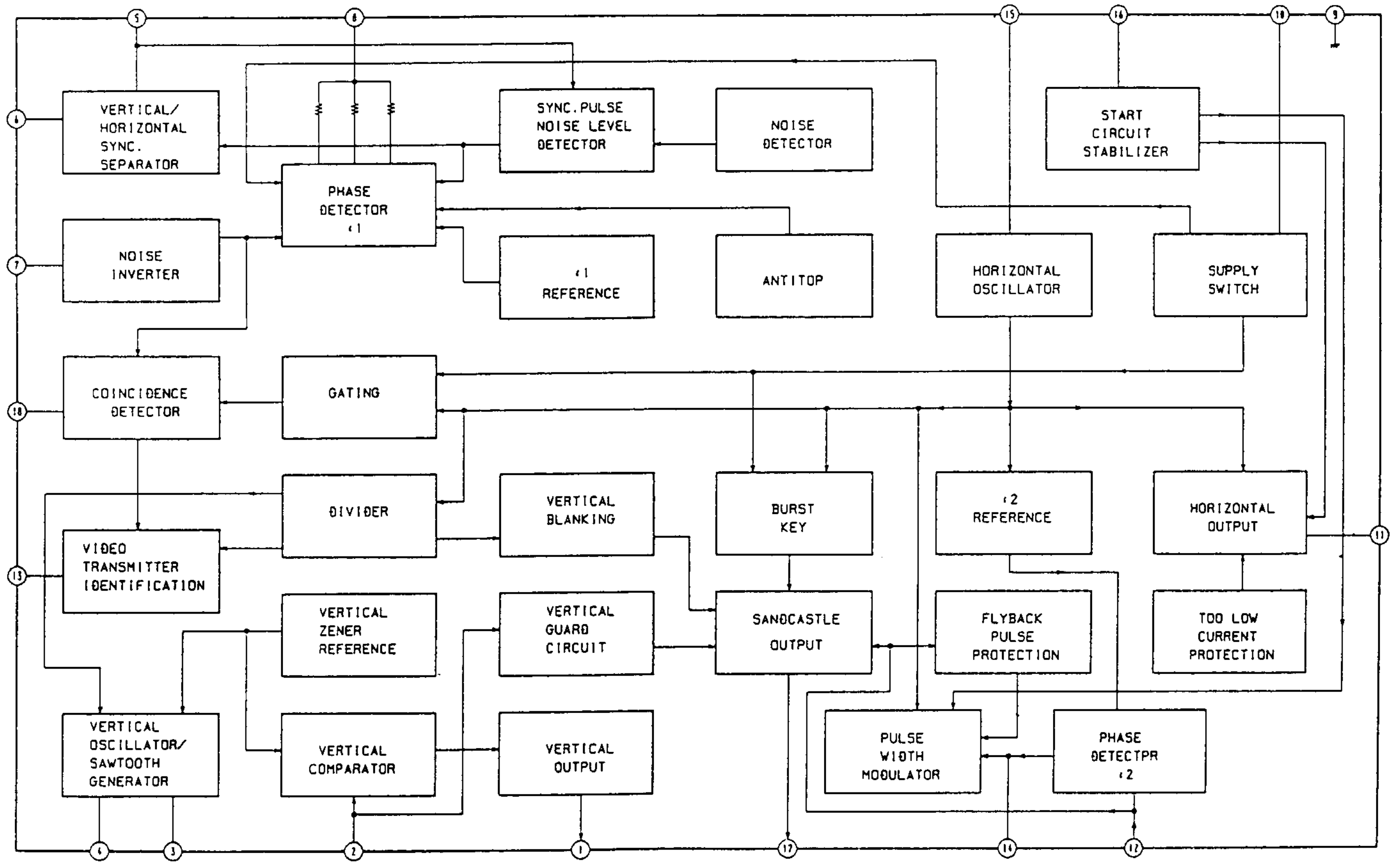
B BOARD IC1302 TDA9145/N3D


SWITCH
I2CBUS
TIMING
IDENT
BANDPASS
ACC
CLOCHE
FOCTRL
SECAM DEMOD
DELAY
PEAKING
CHROMABP
PLL
HUE
PAL/NTSC DEMOD
SWITCHI
TRAPS
SWITCH
DOUBLER
BIAS
21
18
17
22
16
3
5
23
11
10
2
8
24
12
20
6
7
14
13

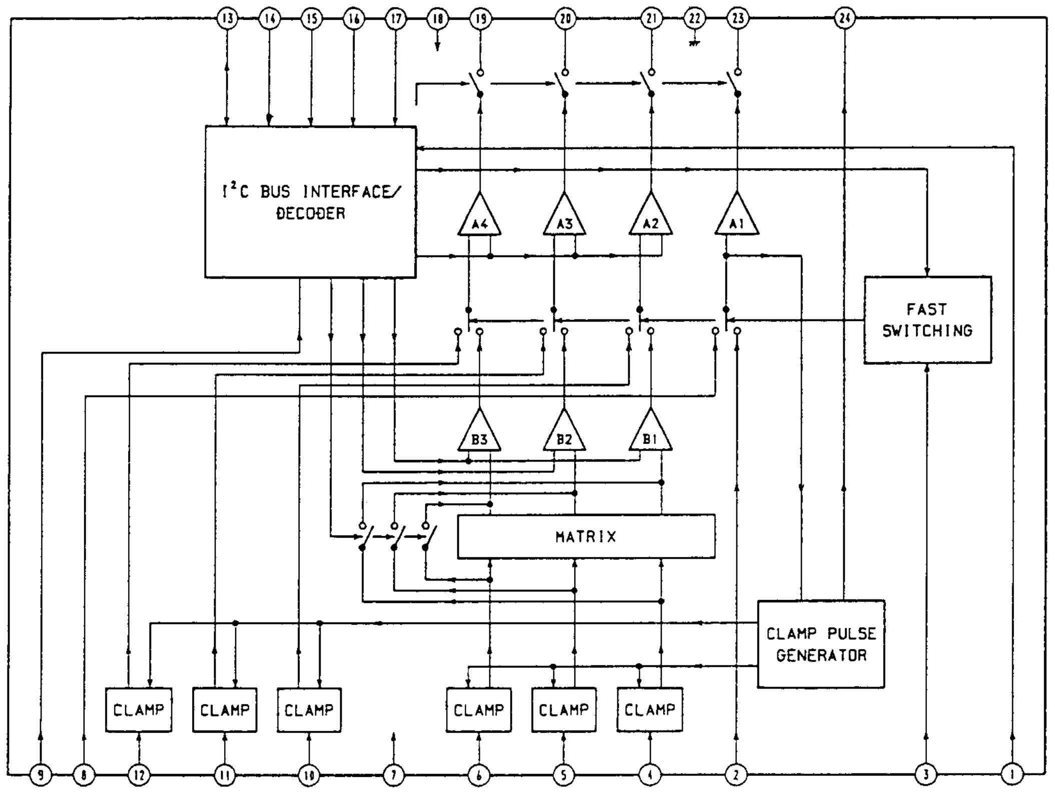
B BOARD IC1305 µPD6456


F#
DATA INPUT SHIFT RESISTOR
INSTRUCTION DECORDER
CONTROL SIGNAL
CHARACTER SIZE RESISTOR
H ADDRESS RESISTOR
WRITE ADDRESS COUNTER
DATA SELECTOR
VIDEO RAM
CHARACTER DATA 7 BIT
DATA 1 BIT
CONTROL DATA RESISTOR
INDICATOR CONTROL DATA RESISTOR
H SIZE COUNTER
H CENT COUNTER
H ADDRESS COUNTER
OSC CIRCUIT
CHARACTER GENERATOR ROM 12 X 18 BIT X 128 WARD
V ADDRESS RESISTOR
OSC SYNC
V SIZE COUNTER
H CENT COUNTER
V ADDRESS COUNTER
UOTPUT CONTROLLOR
3
1
2
9
7
6
16
15
5
8
4
13
12
11
14

B BOARD IC1501 TDA2579B


VERTICAL/ HORIZONTAL SYNC. SEPARATOR
SYNC.PULSE NOISE LEVEL DETECTOR
NOISE DETECTOR
START CIRCUIT STABILIZER
PHASE DETECTOR φ1
NOISE INVERTER
φ1 REFERENCE
ANTITOP
HORIZONTAL OSCILLATOR
SUPPLY SWITCH
COINCIDENCE DETECTOR
GATING
DIVIDER
VERTICAL BLANKING
BURST KEY
φ2 REFERENCE
HORIZONTAL OUTPUT
VIDEO TRANSMITTER IDENTIFICATION
VERTICAL ZENER REFERENCE
VERTICAL GUARD CIRCUIT
SANDCASTLE OUTPUT
FLYBACK PULSE PROTECTION
TOO LOW CURRENT PROTECTION
VERTICAL OSCILLATOR/ SAWTOOTH GENERATOR
VERTICAL COMPARATOR
VERTICAL OUTPUT
PULSE WIDTH MODULATOR
PHASE DETECTPR φ2
5
8
15
16
18
9
4
7
18
13
11
6
3
2
1
17
14
12

B BOARD IC1401 TDA8443B


13
14
15
16
17
18
19
20
21
22
23
24
I²C BUS INTERFACE/ DECODER
A4
A3
A2
A1
FAST SWITCHING
B3
B2
B1
MATRIX
CLAMP PULSE GENERATOR
CLAMP
CLAMP
CLAMP
CLAMP
CLAMP
CLAMP
9
8
12
11
10
7
6
5
4
2
3
1

● B

IC13
IC13
IC13
IC13
IC13
IC14
IC14
IC14
IC14
IC14
IC14
IC15

Q13
Q13
Q13
Q13
Q13
Q13
Q13
Q13
Q13
Q13
Q13
Q13
Q13
Q13
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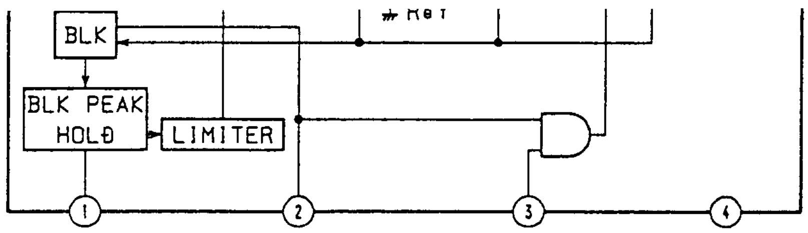
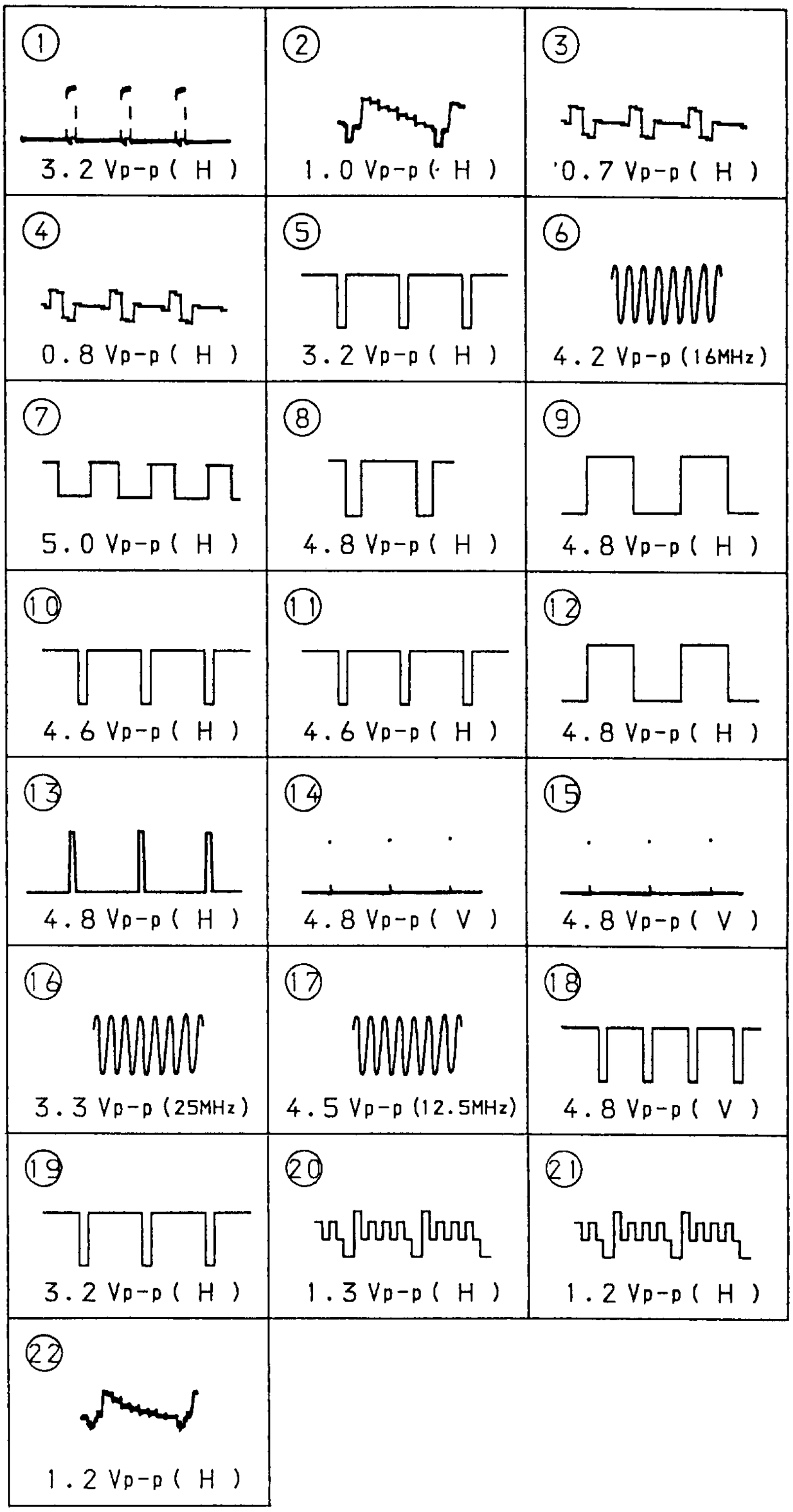
Q14
Q14
Q14
Q14
Q14

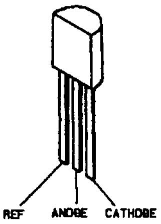

BLK
BLK PEAK HOLD
LIMITER
①
②
③
④

• Q BOARD WAVEFORMS

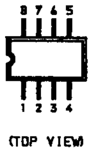

①
3.2 Vp-p (H)
②
1.0 Vp-p (H)
③
0.7 Vp-p (H)
④
0.8 Vp-p (H)
⑤
3.2 Vp-p (H)
⑥
4.2 Vp-p (16MHz)
⑦
5.0 Vp-p (H)
⑧
4.8 Vp-p (H)
⑨
4.8 Vp-p (H)
⑩
4.6 Vp-p (H)
⑪
4.6 Vp-p (H)
⑫
4.8 Vp-p (H)
⑬
4.8 Vp-p (H)
⑭
4.8 Vp-p (V)
⑮
4.8 Vp-p (V)
⑯
3.3 Vp-p (25MHz)
⑰
4.5 Vp-p (12.5MHz)
⑱
4.8 Vp-p (V)
⑲
3.2 Vp-p (H)
⑳
1.3 Vp-p (H)
㉑
1.2 Vp-p (H)
㉒
1.2 Vp-p (H)

5-4. SEMICONDUCTORS

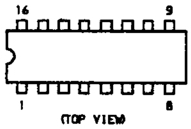
AN1431T


REF
ANODE
CATHODE

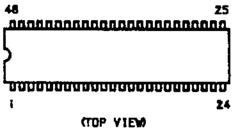
BA4558F
NJM2233BM
NJM2903M
NJM4558M-T2
µPC4558G2


8 7 6 5
1 2 3 4
(TOP VIEW)

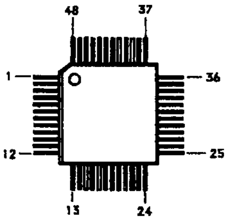
CXA1526P


16
9
1
8
(TOP VIEW)

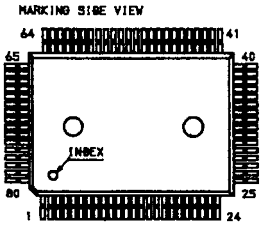
CXA1855S


48
25
1
24
(TOP VIEW)

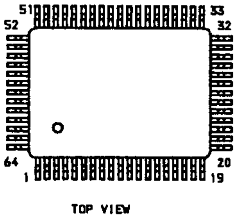
CXD2018Q


48
37
1
36
12
25
13
24

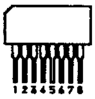
CXD2024AQ


MARKING SIDE VIEW
64
41
65
40
INDEX
80
25
1
24

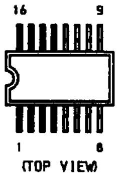
CXP8534A-SV4918


51
33
52
32
64
20
1
19
TOP VIEW

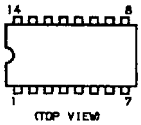
CX20125



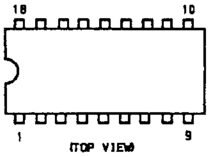
HD14053BFP
MC14046BDWRZ
MC14053BF
TDA4665T-T


16
9
1
8
(TOP VIEW)

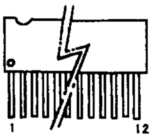
IR2112
LM324N
X24164SIC7000


14
8
1
7
(TOP VIEW)

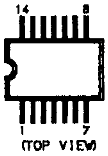
LA7856A
MC33025P
TDA2579B


18
10
1
9
(TOP VIEW)

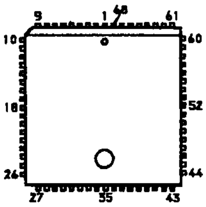
MB81C1000A-80PSZ



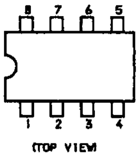
MC74F08M


14
8
1
7
(TOP VIEW)

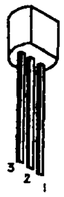
MSP3410TE-L
SAA7158WP-L


9
1
68
61
10
60
18
52
26
44
27
35
43

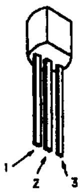
M5216P
NJM2903D


8 7 6 5
1 2 3 4
(TOP VIEW)

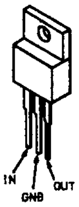
NJM78L05A



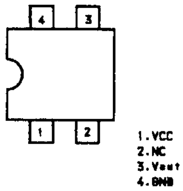
NJM78L08A



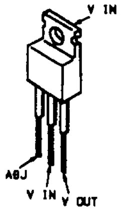
NJM78M09FA
NJM7809FA



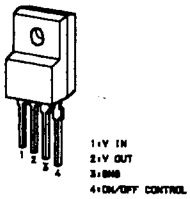
PC123F2


4
3
1
2
1.VCC
2.NC
3.Vout
4.GND

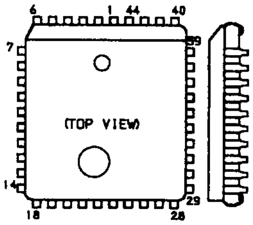
PQ05RH1


V IN
ADJ
V IN
V OUT

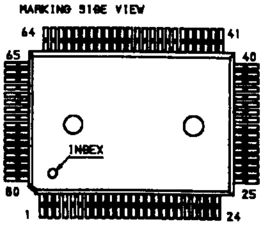
PQ12RE11
PQ12RF21


1
2
3
4
1:V IN
2:V OUT
3:GND
4:ON/OFF CONTROL

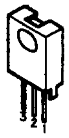
P83C652FBA-V3
/AB517
SAA4951/WP/V1-T
TPU3040TE-L


6
1
44
40
7
39
(TOP VIEW)
17
29
18
28

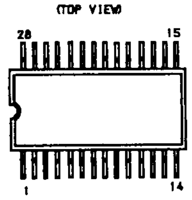
SAA4940H-T


MARKING SIDE VIEW
64
41
65
40
INDEX
80
25
1
24

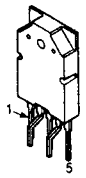
SBX-1790-11



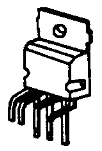
SDA9187-2XGEG
SDA9188-3XGEG
µPD6456GS-640-E2


(TOP VIEW)
28
15
1
14

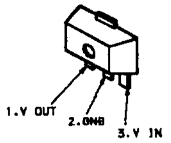
STR-81159A



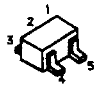
STV9379



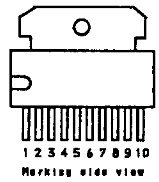
S-80743AL-A7-S


1.V OUT
2.GND
3.V IN

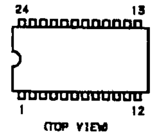
TDA4686
TC4S66F(TE85R)



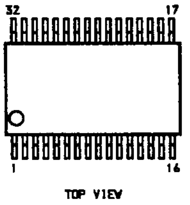
TDA7265


1 2 3 4 5 6 7 8 9 10
Marking side view

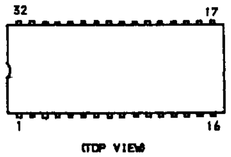
TDA8443B


24
13
1
12
(TOP VIEW)

TDA8755T-T


32
17
1
16
TOP VIEW

TDA9160A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1
16
(TOP VIEW)

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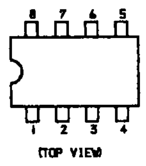
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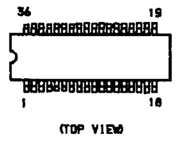
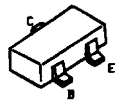
1 2 3 4
(TOP VIEW)

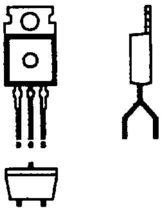
ZA2970-26DTR


36
19
1
18
(TOP VIEW)

BF550
DTA114EK
DTA114TK
DTC114EK
DTC124EK
DTC144EK
2SA1037K
2SA1162G
2SC2412K
2SC2412K-QR
2SC2712-YG



IRFIBC30G-LF



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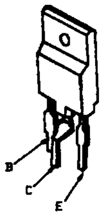

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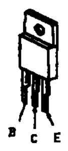
2SD2012



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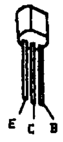
2SO2551



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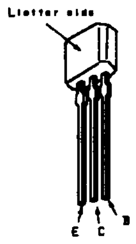
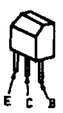
2SA1309A
2SC2785-HFE
2SC3311A


Letter side
E
C
B

2SB734-34
2SC3733
2SD774-34



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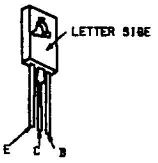
2SC2688-LK
2SC3840K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E
C
B

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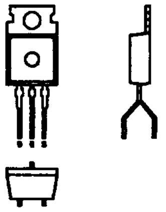

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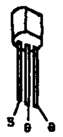
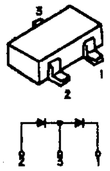
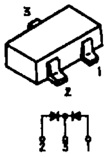
2SK940 (TPE6)



BAS16
BBY40
DA204K
1SS226



DAN202K



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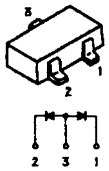

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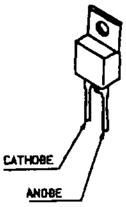
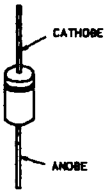
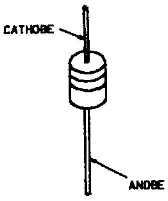

CATHODE
ANODE

D1NL20
EGP20G
EL1Z
GP08DPKG23
GP08D
RGP10GPKG23
RGP15GPKG23


CATHODE
ANODE

D1N20R
ERA38-06
MTZJ-T-77-15
RD10ESB3
RD16ESB3
RD16ES-T1B3
RD33ESB1
RD33F-B1
RD39ESB2
RD39ES-T1B
RD5.1ESB1
RD7.5ESB2
RD9.1ESB
RD9.1ELS
1SS119
1SS119-25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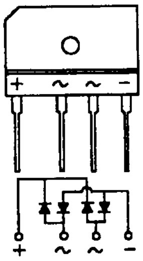
ANODE

D4SB60L
RBA402L
RBA406B



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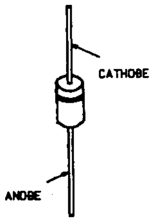
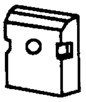
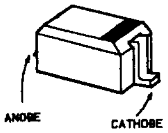
ERB44-06TP1
RGP02-20EL-6394
RU-3AM
S2LA20F


CATHODE
ANODE

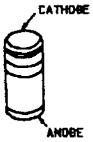
FMG-36S-LF024-104



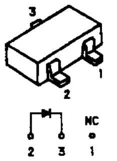
MA110


ANODE
CATHODE

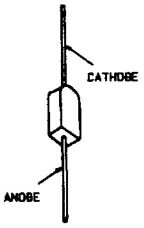
MA3051L-TX


CATHODE
ANODE

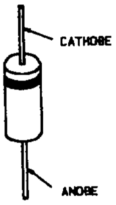
MA3047M-TX
MA3068M
MA3180M-TX
MA3360-M
RD15M-B2
RD2.0MB
RD36M-B
RD5.1M-B2
RD5.6M-B2
RD6.8M-B2



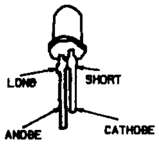
RM11C


CATHODE
ANODE

Ru-3AM

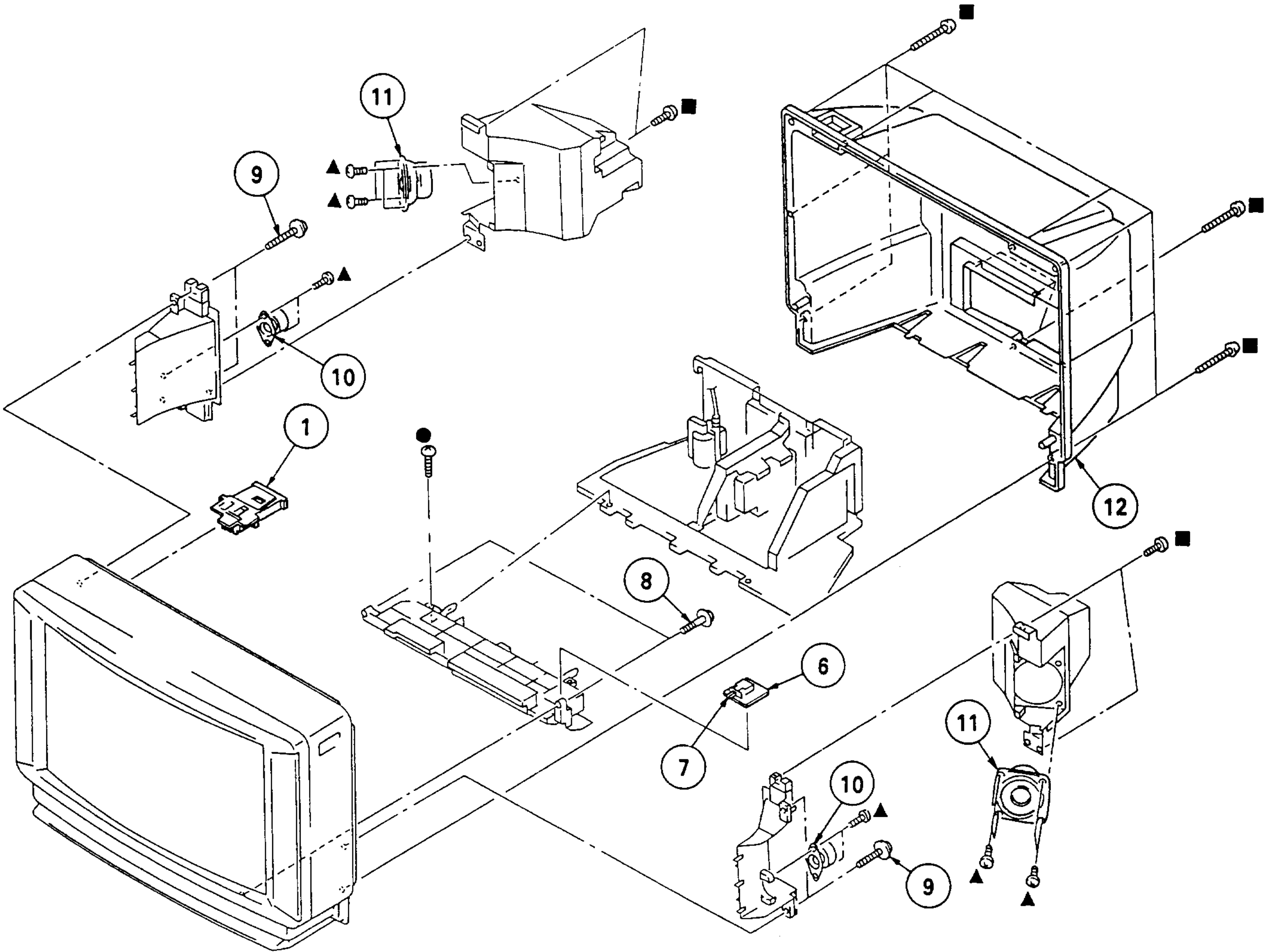

CATHODE
ANODE

TF541S (D102)
SEL1222R-C
SEL122R-C, D


LONG
SHORT
ANODE
CATHODE

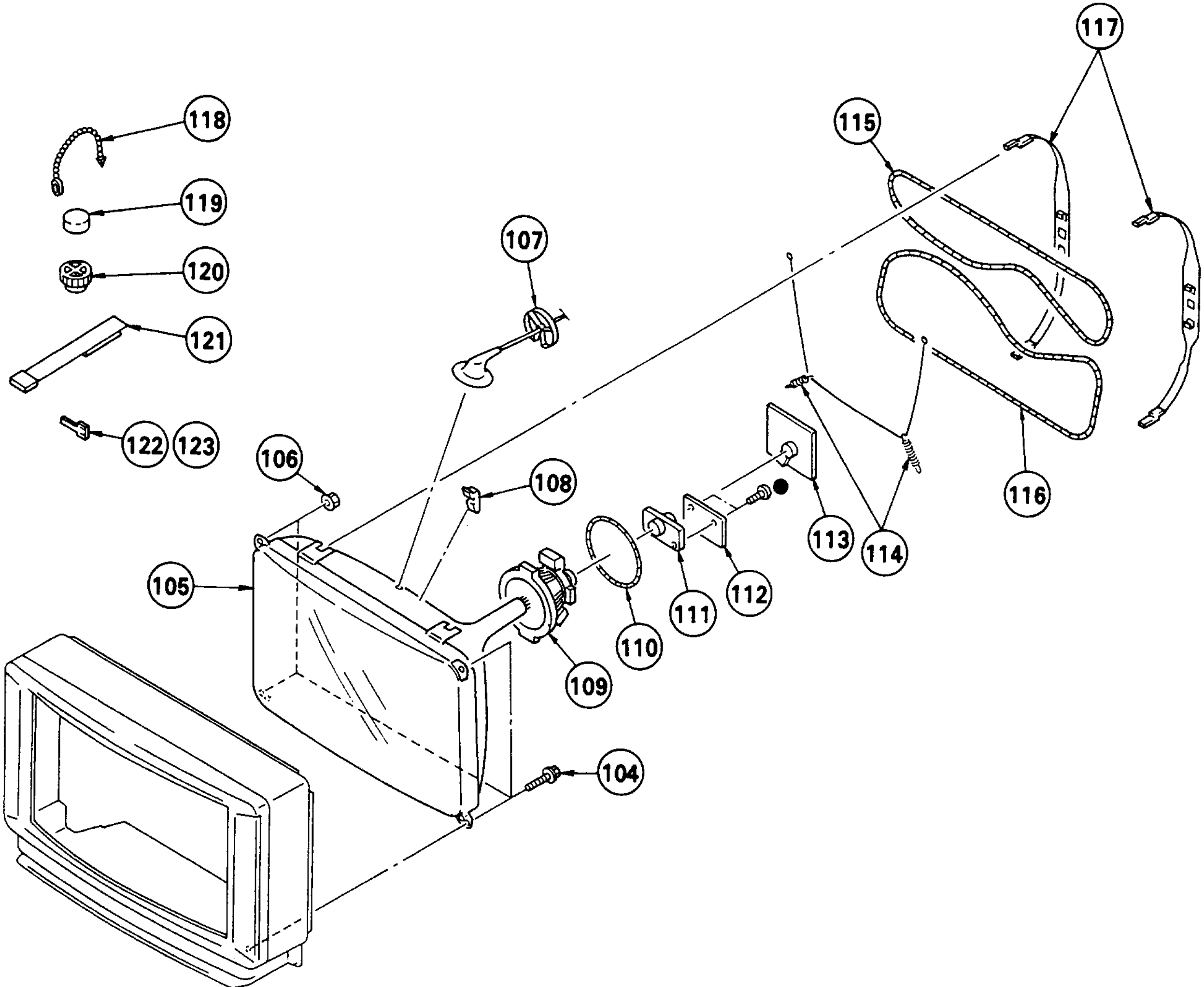
6-1. REAR COVER AND SPEAKER

●	7-685-648-79	SCREW +BVTP 3X12
▲	7-685-661-14	SCREW +BVTP 4X12
■	7-685-663-79	SCREW +BVTP 4X16


■
■
11
▲
▲
9
▲
■
10
■
1
●
12
8
■
6
7
11
10
▲
9
▲
▲

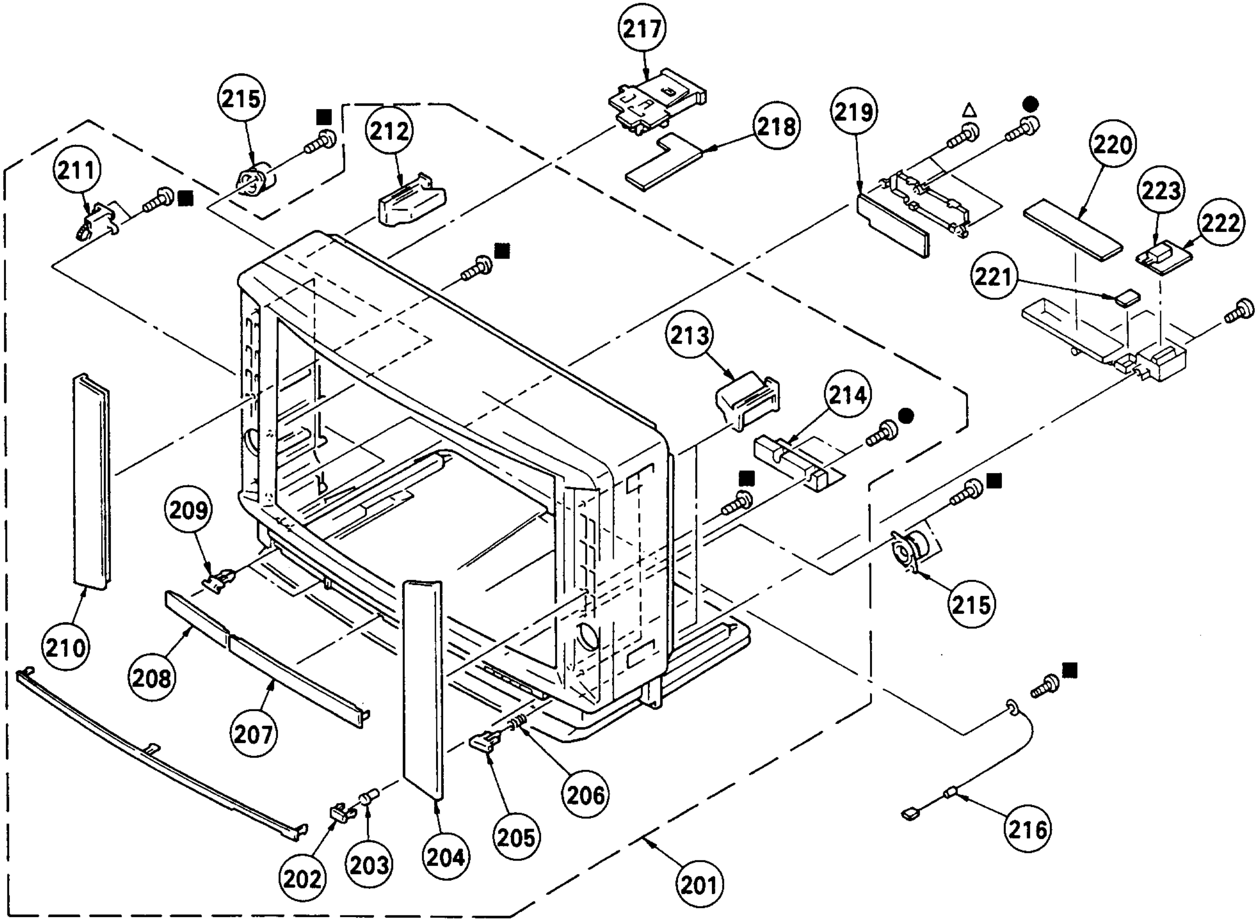
6-2. PICTURE TUBE

● 7-685-648-79 SCREW +BVTP 3X12


117
118
115
119
107
120
121
122
123
106
108
116
113
114
105
112
111
110
109
104
●

6-3. CABINET (WITH BEZEL)

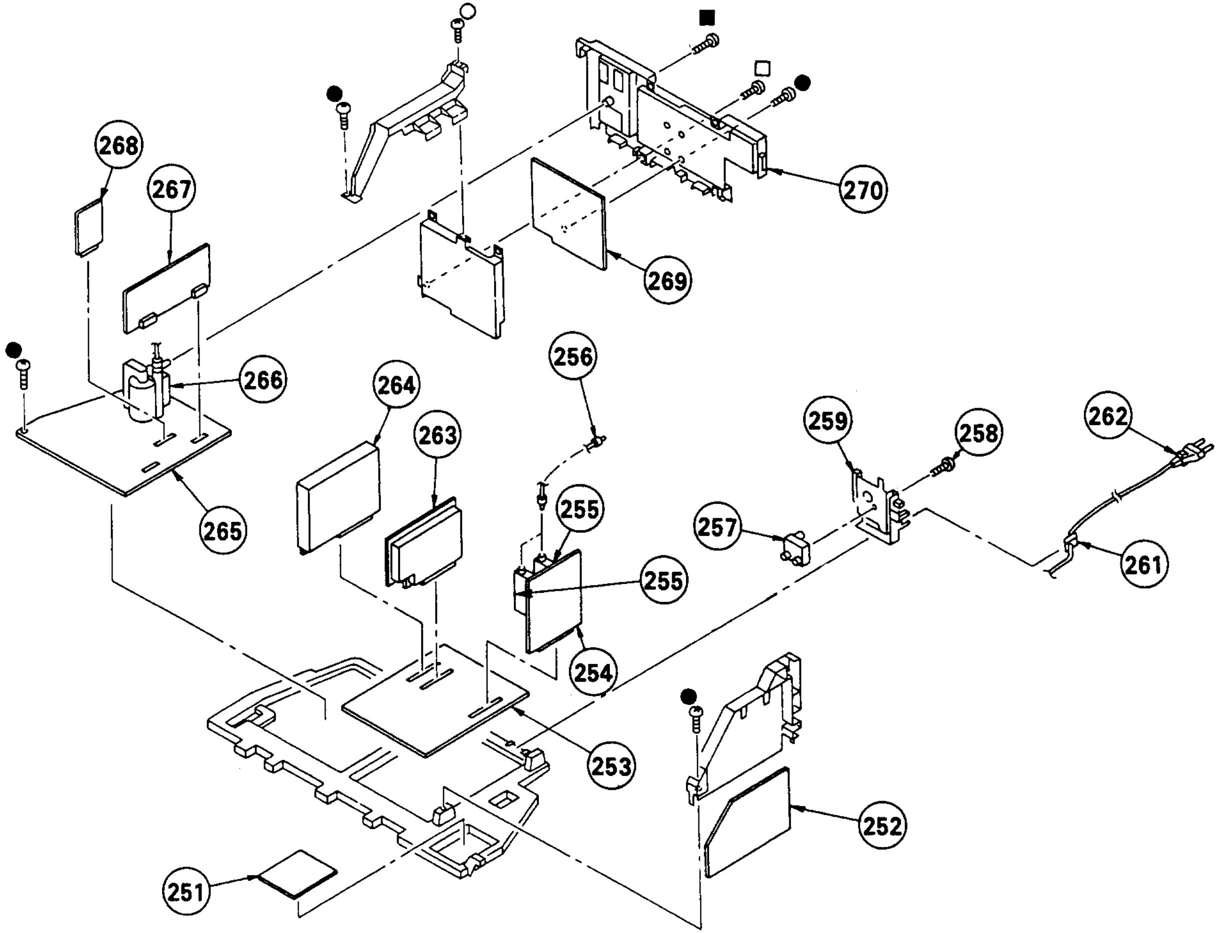
●	7-685-648-79	SCREW +BVTP 3X12
■	7-685-663-79	SCREW +BVTP 4X16
△	7-685-152-19	SCREW +BV 3X25



217
215
■
212
218
219
△
●
211
■
220
223
222
■
221
213
214
●
■
■
209
215
210
208
207
■
206
216
204
205
202
203
201

6-4. CHASSIS

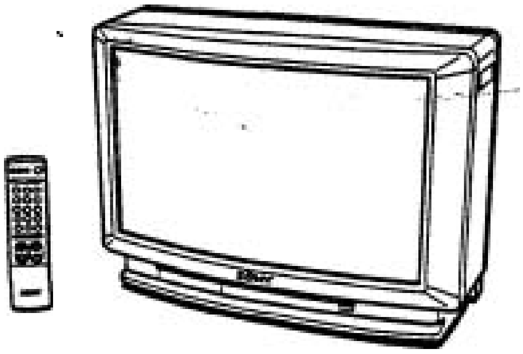
●	7-685-648-79	SCREW +BVTP 3X12
■	7-685-663-79	SCREW +BVTP 4X16
○	7-682-548-04	SCREW +P 3X8
□	7-685-646-79	SCREW +BVTP 3X12


○
■
□
●
●
268
267
270
269
●
266
264
263
256
259
258
262
265
255
257
255
261
254
253
●
252
251

KV-W28MH11/W28MN11
KV-W32MH11/W32MN11

RM-850

SERVICE MANUAL



GE Model

KV-W28MN11
Chassis No. SCC-H22A-A
KV-W32MN11
Chassis No. SCC-H22B-A

HK Model

KV-W28MH11
Chassis No. SCC-H23B-A
KV-W32MH11
Chassis No. SCC-H23A-A

WB Model

KV-W32MH11
Chassis No. SCC-H24A-A

AG-1 CHASSIS

MODELS OF THE SAME SERIES	
KV-W28MH11/W28MN11	
KV-W28MH2/32MH2	
KV-W32MH211/W25M111/W28MN31	

SPECIFICATIONS

Power requirements
110-240V AC, 50/60Hz

Power consumption
240 W

Television system
B/G, I, D/K, M

Color system PAL, PAL 60, SECAM, NTSC4.43, NTSC3.58

Stereo system NICAM Stereo B/G, I ; A2 (German) stereo B/G

Channel coverage
See "Channel coverage" at the bottom.

Antenna 75-ohm external antenna terminal for VHF/UHF

Audio output (speaker)
15 W × 2

Number of terminal
Video Input: 4, Output: 1
Audio Input: 4, Output: 1
S1 Video/S Video
Input: 4, Output: 1
Y: 1 Vp-p, 75 ohms, unbalanced, sync negative,
C: 0.286 Vp-p, 75 ohms

Picture tube HD Trinitron
Tube size (measured diagonally)
KV-W28: 28 inches
KV-W32: 32 inches
Screen size (measured diagonally)
KV-W28: 66 cm
KV-W32: 76 cm

TRINITRON® COLOR TV

SONY®

Dimensions (w/h/d)	KV-W28: 750 × 520 × 528 mm KV-W32: 905 × 600 × 585 mm
Mass	KV-W28: 49.5 kg KV-W32: 73 kg

Accessories

Supplied	Remote commander (1) Size R6 (AA) battery (1) Conversion mains plug
Optional	KV-W28: TV stand SU-W28 KV-W32: TV stand SU-W32

Design and specifications are subject to change without notice.

Channel coverage

M E/ASIA/CATV W EURO

Receivable channel	Channel display
E-2 to E-12	C02 to C12
E-21 to E-69	C21 to C69
S-01 to S-03	S42 to S44
S-1 to S-41	S01 to S41
Indonesia	
1A	C01
2 to 11	C03 to C12
Morocco	
M-4 to M-7	C70 to C73
M-8 to M-10	C8 to C10
New Zealand	
1	C01
2 to 11	C03 to C12
27 to 62	C27 to C62

HK/UK

Receivable channel	Channel display
Hong Kong, United Kingdom	
B-21 to B-68	C21 to C68
Ireland	
A to J	C01 to C09
South Africa	
4 to 13	C04 to C13
21 to 68	C21 to C68

AMERICA/CATV AMERICA

Receivable channel	Channel displa
2 to 79	C02 to C79
A-1	S99
A-2	S98
A-3	S97
A-4	S96
A-5	S95
A-6	S06
A-7	S05
A-8	S01
A to W	S14 to S36
AA to CCC	S37 to S65

(CAUTION)

SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR CARBON PAINTED ON THE CRT, AFTER REMOVING THE ANODE.

WARNING!!

AN ISOLATION TRANSFORMER SHOULD BE USED DURING ANY SERVICE TO AVOID POSSIBLE SHOCK HAZARD, BECAUSE OF LIVE CHASSIS.
THE CHASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE AC POWER LINE.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL FOR SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY. CIRCUIT ADJUSTMENTS THAT ARE CRITICAL FOR SAFE OPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED.

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SECTION 1
GENERAL

The operating instructions mentioned here are partial abstracts from the Operating Instruction Manual. The page numbers of the Operating Instruction Manual remein as in the manual.

WARNING

To prevent fire or shock hazard, do not expose the TV to rain or moisture.
Dangerously high voltages are present inside the TV. Do not open the cabinet. Refer servicing to qualified personnel only.

For general safety:
- Do not expose the TV to rain or moisture.
- Do not open the rear cover.

For safe installation:
- Do not block the ventilation openings.
- Do not install the TV in hot, humid or excessively dusty places.
- Do not install the TV where it may be exposed to mechanical vibrations.

For safe operations:
- Do not operate the TV on anything but 110-240 V AC.
- Do not operate the TV if any liquid or solid object falls in it—have it checked immediately.
- Do not keep the TV plugged in if you are not going to use it for several days.
- Do not pull the power cord to disconnect the TV. Pull it out by the plug.

Caution
Avoid touching the screen surface and take care not to scratch it with hard objects.

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17 Viewing teletext
19 Customizing the TV
21 Setting the remote command mode

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22 Connections
23 Troubleshooting
24 Channel allocation
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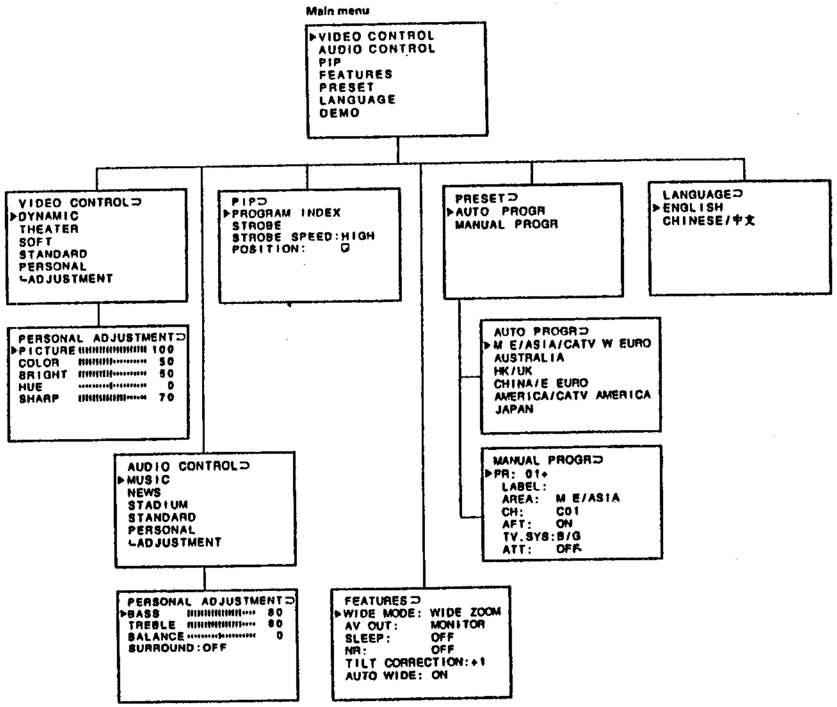
Introducing the menu

You can preset channels and set the wide mode, picture quality, sound, and other settings using the on-screen menus.
You can use the buttons on both remote commander and the TV to operate the menus.


Main menu
▶VIDEO CONTROL
AUDIO CONTROL
PIP
FEATURES
PRESET
LANGUAGE
DEMO
VIDEO CONTROL⊃
▶DYNAMIC
THEATER
SOFT
STANDARD
PERSONAL
└ADJUSTMENT
PERSONAL ADJUSTMENT⊃
▶PICTURE 100
COLOR 50
BRIGHT 50
HUE 0
SHARP 70
PIP⊃
▶PROGRAM INDEX
STROBE
STROBE SPEED:HIGH
POSITION:
AUDIO CONTROL⊃
▶MUSIC
NEWS
STADIUM
STANDARD
PERSONAL
└ADJUSTMENT
PERSONAL ADJUSTMENT⊃
▶BASS 80
TREBLE 80
BALANCE 0
SURROUND:OFF
FEATURES⊃
▶WIDE MODE: WIDE ZOOM
AV OUT: MONITOR
SLEEP: OFF
NR: OFF
TILT CORRECTION:+1
AUTO WIDE: ON
PRESET⊃
▶AUTO PROGR
MANUAL PROGR
AUTO PROGR⊃
▶M E/ASIA/CATV W EURO
AUSTRALIA
HK/UK
CHINA/E EURO
AMERICA/CATV AMERICA
JAPAN
MANUAL PROGR⊃
▶PR: 01+
LABEL:
AREA: M E/ASIA
CH: C01
AFT: ON
TV.SYS:B/G
ATT: OFF
LANGUAGE⊃
▶ENGLISH
CHINESE/中文

Getting back to the previous menu

Press △ + or ▽ – to move the cursor (▶) to the first line (⊃) of each menu (except for the main menu), and press ENTER.

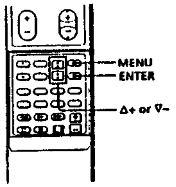
Cancelling the menu screen

Press MENU.

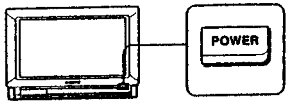
Notes
- If more than 60 seconds elapse after you press a button, the menu screen disappears automatically.
- DEMO in the main menu briefly introduces the main features available for the TV. Press any button on the remote commander to stop this function.

Changing the menu language

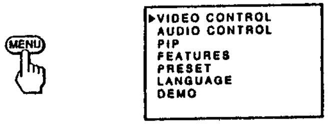
If you prefer Chinese to English, you can change the menu language. You can use the buttons on both the remote commander and the TV.


MENU
ENTER
Δ+ or ∇–

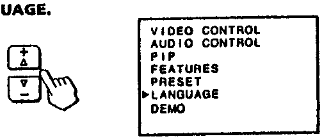
1 **Press POWER on the TV.**



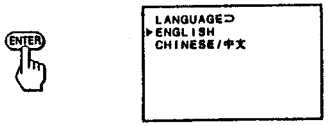
2 **Press MENU.**


MENU
▶VIDEO CONTROL
AUDIO CONTROL
PIP
FEATURES
PRESET
LANGUAGE
DEMO

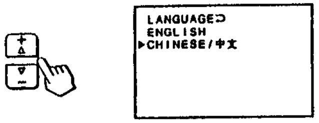
3 **Press Δ + or ∇ – to move the cursor (▶) to LANGUAGE.**


VIDEO CONTROL
AUDIO CONTROL
PIP
FEATURES
PRESET
▶LANGUAGE
DEMO

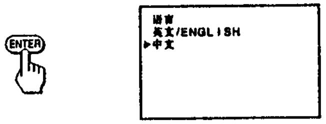
4 **Press ENTER.**


ENTER
LANGUAGE⊃
▶ENGLISH
CHINESE/中文

5 **Press Δ + or ∇ – to select CHINESE.**


LANGUAGE⊃
ENGLISH
▶CHINESE/中文

6 **Press ENTER.**


ENTER
語言
英文/ENGLISH
▶中文

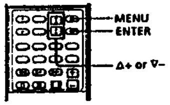
7 **Press MENU to return to the normal screen.**

Presetting channels

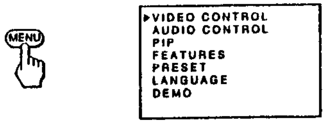
You can preset TV channels easily by storing all the receivable channels automatically. You can also preset channels manually or skip program positions (pages 19 and 20).
You can preset channels using the buttons on the TV as well as those on the remote commander.

Presetting channels automatically

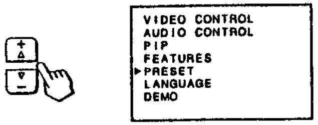
You can preset up to 100 TV channels in numerical sequence from program position 1.


MENU
ENTER
Δ+ or ∇–

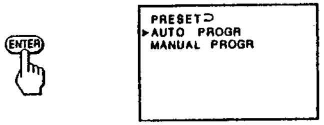
1 **Press MENU.**


MENU
▶VIDEO CONTROL
AUDIO CONTROL
PIP
FEATURES
PRESET
LANGUAGE
DEMO

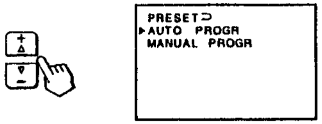
2 **Press Δ + or ∇ – to move the cursor (▶) to PRESET.**


VIDEO CONTROL
AUDIO CONTROL
PIP
FEATURES
▶PRESET
LANGUAGE
DEMO

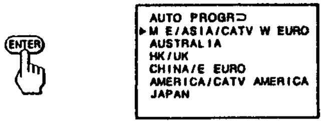
3 **Press ENTER.**


ENTER
PRESET⊃
▶AUTO PROGR
MANUAL PROGR

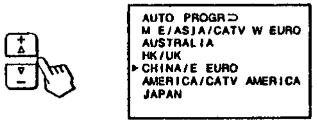
4 **Press Δ + or ∇ – to select AUTO PROGR.**


PRESET⊃
▶AUTO PROGR
MANUAL PROGR

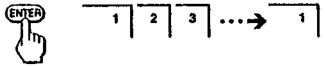
5 **Press ENTER.**


ENTER
AUTO PROGR⊃
▶M E/ASIA/CATV W EURO
AUSTRALIA
HK/UK
CHINA/E EURO
AMERICA/CATV AMERICA
JAPAN

6 **Press Δ + or ∇ – to select your area (channel system).**
For the areas allocated in each channel system, see "Channel allocation" on page 24.

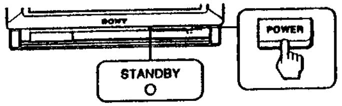

AUTO PROGR⊃
M E/ASIA/CATV W EURO
AUSTRALIA
HK/UK
▶CHINA/E EURO
AMERICA/CATV AMERICA
JAPAN

7 **Press ENTER.**
Presetting starts from program 1.

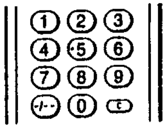


Watching the TV

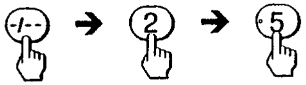
1 Select the TV program you want to watch.
Press the number buttons or PROGR +/–. The TV turns on automatically and the selected program appears.
When the STANDBY indicator on the front of the TV is not lit, press POWER on the TV, and select the program position.



To select a program position directly
Press the number buttons.



To select a two-digit program position, press "-/--" before the number buttons.
For example, to select program position 25, press "-/--" and then "2" and "5."



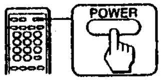
To scan through program positions
Press PROGR +/– until the program position you want appears.

To select a channel directly
Press C (once for VHF/UHF channels, twice for cable TV channels), then press the number buttons (two-digit number for VHF/UHF channels, three-digit number for cable TV channels). For example, to select the VHF/UHF channel 4, press C, 0 then 4.

2 Press VOL +/– to adjust the volume.

Switching off the TV

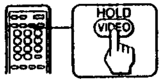
To switch off the TV temporarily, press POWER on the remote commander.
The STANDBY indicator lights.

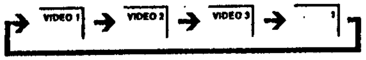


To switch off the TV completely, press POWER on the TV.

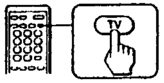
Watching the video input

Press VIDEO/HOLD.



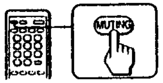


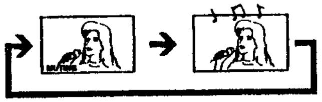
To watch TV, press TV, the number buttons or PROGR +/–.



Muting the sound

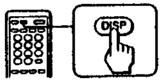
Press MUTING.

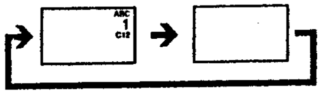




Displaying on-screen information

Press DISP.





Note
- When you press DISP, the on-screen display shows the picture, sound and wide mode settings as well, all of which disappear after three seconds.

Setting the Sleep Timer

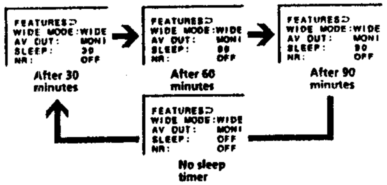
You can set the TV to turn off automatically after the period of time you set.

1 Press MENU.

2 Press Δ + or ∇ – to move the cursor (▶) to FEATURES, and press ENTER.

3 Press Δ + or ∇ – to move the cursor (▶) to SLEEP, and press ENTER.

4 Press Δ + or ∇ – until the time (in minutes) you want appears.



```
FEATURES⊃
WIDE MODE:WIDE
AV OUT:   MONI
SLEEP:    30
NR:       OFF
```

After 30 minutes

```
FEATURES⊃
WIDE MODE:WIDE
AV OUT:   MONI
SLEEP:    60
NR:       OFF
```

After 60 minutes

```
FEATURES⊃
WIDE MODE:WIDE
AV OUT:   MONI
SLEEP:    90
NR:       OFF
```

After 90 minutes

```
FEATURES⊃
WIDE MODE:WIDE
AV OUT:   MONI
SLEEP:    OFF
NR:       OFF
```

No sleep timer

5 Press ENTER.

To cancel the Sleep Timer, select OFF, or turn the TV off.

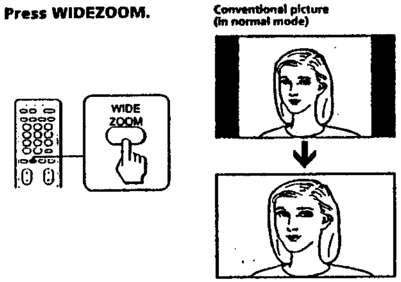
Watching the picture in wide mode

You can enjoy a variety of wide-mode pictures. Select the appropriate mode for the type of picture. Typical uses are as follows.
You can select wide mode using the menu as well as the buttons on the remote commander. Select WIDE MODE from the FEATURES menu, then select the desired mode.

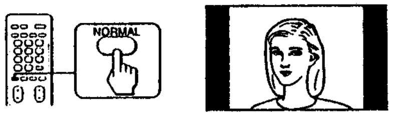
Viewing regular TV programs

Normally, use widezoom mode.

Press WIDEZOOM.



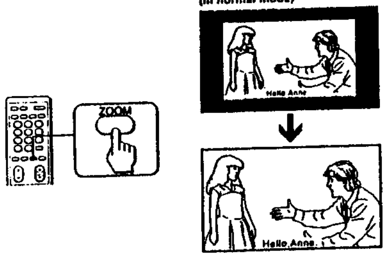
To view a picture in the conventional size, press NORMAL.



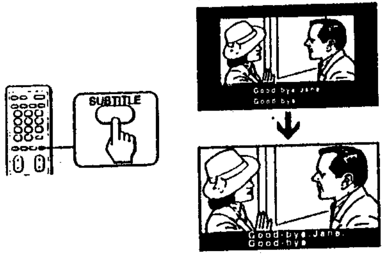
Viewing a movie picture with black bands

Use zoom or subtitle mode to view a movie picture with black bands.

Press ZOOM.


Conventional picture (in normal mode)

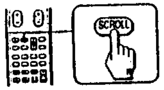
When the subtitles are lost in zoom mode, press SUBTITLE.


Conventional picture (in normal mode)

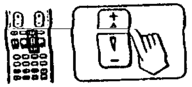
To scroll the picture up or down

When the subtitles are lost even in subtitle mode, you can scroll the picture up or down to view them. The picture scrolls up or down within the range of -5 to +5. You can also use the scroll function in widezoom and zoom modes. Using the scroll function in widezoom mode changes the vertical size of the picture.

1 **Press SCROLL.**



2 **Press Δ + or ∇ – to adjust the position of the picture.**

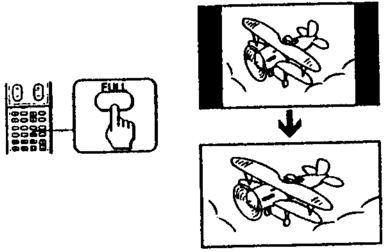


Note
- If you display the PIP screen in zoom mode or scroll the picture with the PIP screen in zoom mode or subtitle mode, the PIP screen may be lost. However, this does not indicate a malfunction.

Viewing a video game screen

When you view a video game screen with dynamic effect, use full mode.

Press FULL.


Conventional picture (in normal mode)

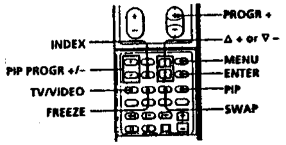
To switch the auto wide function

When AUTO WIDE is set to ON, the factory setting, the TV automatically displays the picture on the screen in full mode if an S1 Video signal is received. If you want to select another mode for the signal, set AUTO WIDE to OFF.

1 **Press MENU.**
2 **Press Δ + or ∇ – to move the cursor (▶) to FEATURES, and press ENTER.**
3 **Press Δ + or ∇ – to move the cursor (▶) to AUTO WIDE, and press ENTER.**
4 **Press Δ + or ∇ – to select OFF, and press ENTER.**

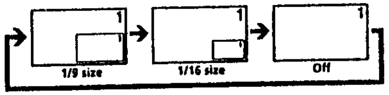
Using the Picture-in-Picture features

You can display a Picture-in-Picture (PIP) screen (small picture) within the main picture of a TV program or a video input.
For the KV-W28, you have to use the connected VCR's built-in tuner to enjoy two different TV programs simultaneously.



Displaying PIP

Press PIP.

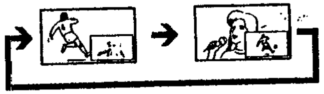


Selecting a TV program or video input in the PIP screen

To select a TV program, press PIP PROGR +/– (yellow buttons) for the KV-W32.
For the KV-W28, select a TV program with the PROGR +/– buttons on the connected VCR.
To select a video input, press TV/VIDEO.

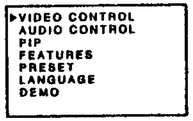
Swapping pictures between the main and PIP screens

Press SWAP.



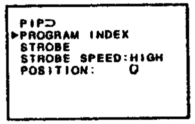
Changing the position of the PIP screen

1 **Press MENU.**



```
▶VIDEO CONTROL
 AUDIO CONTROL
 PIP
 FEATURES
 PRESET
 LANGUAGE
 DEMO
```

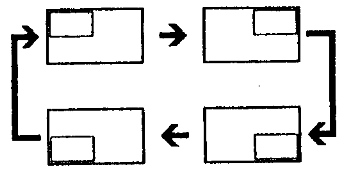
2 **Press Δ + or ∇ – to move the cursor (▶) to PIP, and press ENTER.**



```
 PIP⊃
▶PROGRAM INDEX
 STROBE
 STROBE SPEED:HIGH
 POSITION:    ◻
```

3 **Press Δ + or ∇ – to move the cursor (▶) to POSITION, and press ENTER.**

4 **Press Δ + or ∇ – to select the position you want.**
Pressing Δ + changes the position as shown below.
Pressing ∇ – changes the position in reverse order.



Note
- If you display the PIP screen in zoom or subtitle mode, you can move the PIP screen only to the lower left or the lower right.

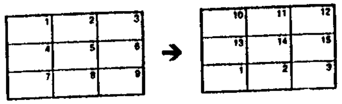
Freezing the PIP screen

Press FREEZE.
To restore the normal picture, press FREEZE again.

Checking all the preset programs (Program Index)

Press INDEX.
The nine preset programs appear in the separated screen in sequence, switching the picture for each second. The sound is muted. Then next nine sequential programs appear. After all the preset programs are displayed, the programs switch the picture with the sound for each five seconds.

Pressing PROGR + also switches to the next nine programs.



To restore the normal picture
Press the number buttons which you want to watch (e.g., for program 25, press -/--, 2 and 5). Pressing INDEX also restores the normal picture.

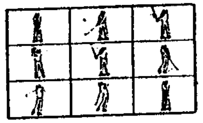
Notes
- You can also display nine sequential TV programs using the menu. Select PROGRAM INDEX from the PIP menu, then press ENTER.
- If you display different TV systems in the Program Index screen, the size of the separated screens may be different.

Displaying frame-by-frame pictures (Strobe)

1 **Press MENU.**

2 **Press Δ + or ∇ – to move the cursor (▶) to PIP, and press ENTER.**

3 **Press Δ + or ∇ – to move the cursor (▶) to STROBE, and press ENTER.**



To select the strobe speed
Select STROBE SPEED from the PIP menu, and press ENTER. Then select HIGH (3 seconds), MIDDLE (7 seconds) or LOW (12 seconds) with Δ + or ∇ –, and press ENTER.

To restore the normal picture
Select STROBE from the PIP menu again, and press ENTER.
You can also restore the normal picture with TV, VIDEO, PROGR +/–, POWER or Wide mode buttons.

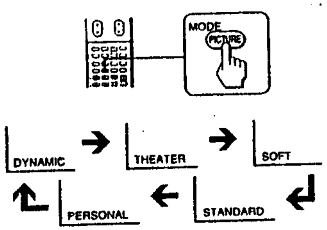
Note
- You can hear the normal sound when using the strobe feature.

Notes on PIP features
- When you display a VCR picture in the PIP screen at a speed other than normal speed, the picture may be noisy depending on the VCR. The picture can be improved by selecting the smaller size of the PIP screen.
- If you display different color systems in the main screen and the PIP screen, the size of the PIP screen may be different and the PIP picture may be noisy. This is not caused by the malfunction of the TV.

Selecting the picture mode

You can select the picture mode using the menu as well as the PICTURE MODE button on the remote commander. Select VIDEO CONTROL from the main menu, then select the desired mode.

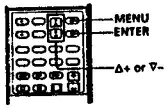
Press PICTURE MODE until the mode you want appears on the screen.



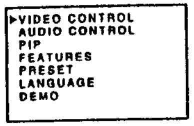
Select	To
DYNAMIC	Display more contrast picture
THEATER	Display darker and finely detailed picture suitable for movies
SOFT	Display softer picture suitable for video games or for viewing in a dark room
STANDARD	Display normal contrast picture
PERSONAL	Display the picture that is adjusted using ADJUSTMENT in the VIDEO CONTROL menu

Adjusting the picture setting (ADJUSTMENT)

You can adjust the picture quality to suit your taste with the ADJUSTMENT option. The adjusted settings are stored in the PERSONAL option.

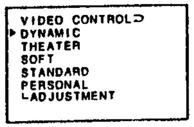


1 **Press MENU.**



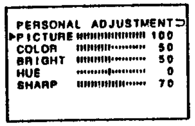
```
▶VIDEO CONTROL
 AUDIO CONTROL
 PIP
 FEATURES
 PRESET
 LANGUAGE
 DEMO
```

2 **Press Δ + or ∇ – to move the cursor (▶) to VIDEO CONTROL, and press ENTER.**



```
 VIDEO CONTROL⊃
▶DYNAMIC
 THEATER
 SOFT
 STANDARD
 PERSONAL
 └ADJUSTMENT
```

3 **Press Δ + or ∇ – to move the cursor (▶) to ADJUSTMENT, and press ENTER.**



```
 PERSONAL  ADJUSTMENT⊃
▶PICTURE                100
 COLOR                   50
 BRIGHT                  50
 HUE                      0
 SHARP                   70
```

4 **Press Δ + or ∇ – to move the cursor (▶) to the item you want to adjust, and press ENTER.**

5 **Press Δ + or ∇ – to adjust the item, and press ENTER.**

Item	Press Δ + to	Press ∇ – to
PICTURE	Increase picture contrast	Decrease picture contrast
COLOR	Increase color intensity	Decrease color intensity
BRIGHT	Brighten the picture	Darken the picture
HUE	Make skin tones become greenish	Make skin tones become reddish
SHARP	Sharpen the picture	Soften the picture

6 **To adjust other items, repeat steps 4 and 5.**

7 **Press MENU to return to the normal screen.**

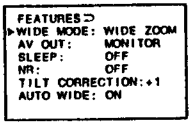
Note
- You can adjust HUE for NTSC color system only.

Reducing the noise of the picture (NR)

You can reduce the noise level of the picture when the TV receives a weak signal or when you play a video tape that is in poor condition.

1 **Press MENU.**

2 **Press Δ + or ∇ – to select FEATURES, and press ENTER.**



```
 FEATURES⊃
▶WIDE MODE: WIDE ZOOM
 AV OUT:    MONITOR
 SLEEP:     OFF
 NR:        OFF
 TILT CORRECTION:+1
 AUTO WIDE: ON
```

3 **Press Δ + or ∇ – to select NR, and press ENTER.**

4 **Press Δ + or ∇ – to select ON, and press ENTER.**
To turn the noise reduction off, select OFF and press ENTER.

If the color of the picture is abnormal when receiving programs through the ╥ (antenna) terminal
Press COLOR SYSTEM on the TV or change the TV system setting from the menu as described below until the color becomes normal.

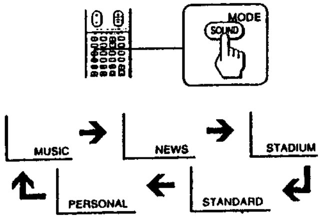
1. **Press MENU.**
2. **Press Δ + or ∇ – to move the cursor (▶) to PRESET, and press ENTER.**
3. **Press Δ + or ∇ – to move the cursor (▶) to MANUAL PROGR, and press ENTER.**
4. **Press Δ + or ∇ – to move the cursor (▶) to TV SYS, and press ENTER.**
5. **Press Δ + or ∇ – to change the TV system until the color becomes normal.**

Note
- Normally set COLOR SYSTEM to AUTO.

Selecting the sound mode

You can select the sound mode using the menu as well as the SOUND MODE button on the remote commander. Select AUDIO CONTROL from the main menu, then select the desired mode.

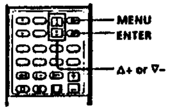
Press SOUND MODE until the mode you want appears on the screen.



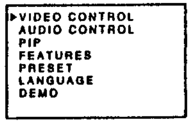
Select	To
MUSIC	Listen to music programs. It gives sound with a live concert effect.
NEWS	Listen to news program. A person's voice can be heard clearly.
STADIUM	Listen to sports program. It gives sound with a sports stadium effect.
STANDARD	Listen to sound other than music, news or sports program.
PERSONAL	Listen to the sound that is adjusted using ADJUSTMENT in the AUDIO CONTROL menu.

Adjusting the sound setting (ADJUSTMENT)

You can adjust the sound quality to suit your taste with the ADJUSTMENT option. The adjusted settings are stored in the PERSONAL option.

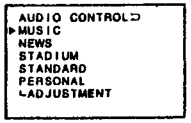


1 **Press MENU.**



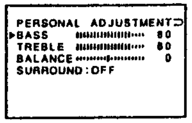
```
▶VIDEO CONTROL
 AUDIO CONTROL
 PIP
 FEATURES
 PRESET
 LANGUAGE
 DEMO
```

2 **Press Δ + or ∇ – to move the cursor (▶) to AUDIO CONTROL, and press ENTER.**



```
 AUDIO CONTROL⊃
▶MUSIC
 NEWS
 STADIUM
 STANDARD
 PERSONAL
 ↳ADJUSTMENT
```

3 **Press Δ + or ∇ – to move the cursor (▶) to ADJUSTMENT, and press ENTER.**



```
 PERSONAL  ADJUSTMENT⊃
▶BASS     ||||||||||||····  80
 TREBLE   ||||||||||||····  80
 BALANCE  ·······|·······   0
 SURROUND:OFF
```

4 **Press Δ + or ∇ – to move the cursor (▶) to the item you want to adjust, and press ENTER.**

5 **Press Δ + or ∇ – to adjust the item, and press ENTER.**

Item	Press Δ + to	Press ∇ – to
BASS	Increase the bass sound	Decrease the bass sound
TREBLE	Increase the treble sound	Decrease the treble sound
BALANCE	Increase the volume of right speaker	Increase the volume of left speaker

6 **To adjust other items, repeat steps 4 and 5.**

7 **Press MENU to return to the normal screen.**

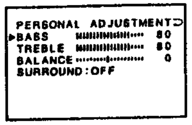
Listening to surround sound

You can enjoy a surround sound effect that is like being in a movie theater or a concert hall when receiving stereo signals.

1 **Press MENU.**

2 **Press Δ + or ∇ – to move the cursor (▶) to AUDIO CONTROL, and press ENTER.**

3 **Press Δ + or ∇ – to move the cursor (▶) to ADJUSTMENT, and press ENTER.**



```
 PERSONAL  ADJUSTMENT⊃
▶BASS     ||||||||||||····  80
 TREBLE   ||||||||||||····  80
 BALANCE  ·······|·······   0
 SURROUND:OFF
```

4 **Press Δ + or ∇ – to move the cursor (▶) to SURROUND, and press ENTER.**

5 **Press Δ + or ∇ – to select ON, and press ENTER.**

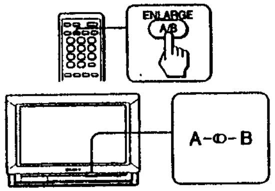
If the sound is distorted or noisy when receiving programs through the ╦ (antenna) terminal
Change the TV system setting as follows until the sound becomes clear.

1. **Press MENU.**
2. **Press Δ + or ∇ – to move the cursor (▶) to PRESET, and press ENTER.**
3. **Press Δ + or ∇ – to move the cursor (▶) to MANUAL PROGR, and press ENTER.**
4. **Press Δ + or ∇ – to move the cursor (▶) to TV SYS, and press ENTER.**
5. **Press Δ + or ∇ – to change the TV system until the sound becomes clear.**

Selecting a stereo or bilingual program

You can enjoy stereo sound or bilingual program of NICAM and A2 (German) stereo systems. The initial setting is stereo sound.

Press A/B/ENLARGE repeatedly until you receive the sound you want.
The sound changes and the corresponding indicator lights up as follows:



When receiving a NICAM program:

Broadcasting	On-screen Display	Selected sound (Indicator lit)
NICAM stereo	NICAM	→ Stereo → Regular ↵ (A and B)
NICAM bilingual	NICAM	→ A → B → Regular ↵ (A) (B)
NICAM monaural	NICAM	→ NICAM monaural (A) Regular ←

When receiving an A2 (German) stereo program:

Broadcasting	On-screen display	Selected sound (Indicator lit)
A2 (German) stereo	STEREO	→ Stereo → Monaural ↵ (A and B)
A2 (German) bilingual	—	→ A → B ↵ (A) (B)

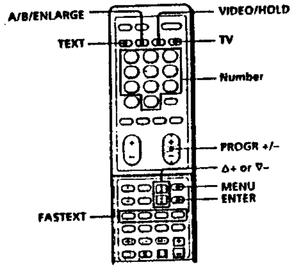
Receiving area for NICAM and A2 (German) stereo programs

System	Receiving area
NICAM	Hong Kong, Singapore, New Zealand, etc.
A2 (German) stereo	Australia, Malaysia, Thailand, etc.

Notes
- If the signal is very weak, the sound becomes monaural.
- If the stereo sound is noisy, select "regular" or "mono." The sound becomes monaural, however, the noise will be reduced.

Viewing Teletext

TV stations broadcast an information service called Teletext via a local TV channel.
Teletext service allows you to receive various information such as weather forecasts or news at any time. Some of the features, however, may not be available depending on the Teletext service.



Displaying Teletext

1. **Select a TV channel which carries the Teletext broadcast you want to watch.**
2. **Press TEXT to display the Teletext.**
   A Teletext page (normally the index page) is displayed. If there is no Teletext broadcast, P100 appears in the top left corner of the screen.

To switch Teletext off, press TV.

Superimposing a Teletext page on the TV picture

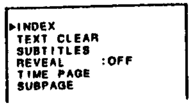
Press TEXT.
Each time you press TEXT, the screen changes as follows:

→ Teletext → Teletext and TV → TV ┐

Checking the contents of a Teletext service (INDEX)

When Teletext is switched on, you can display the Teletext menu.

1. **Press MENU.**



```
▶INDEX
 TEXT CLEAR
 SUBTITLES
 REVEAL      :OFF
 TIME PAGE
 SUBPAGE
```

2. **Press Δ + or ∇ - to move the cursor (▶) to INDEX, and press ENTER.**

Selecting a Teletext page

Press the number buttons to enter the three-digit page number of the Teletext number you want.
If you make a mistake, re-enter the correct page number.

To access the next or previous page, press PROGR +/-.

Preventing a Teletext page from being updated (HOLD)

A Teletext page may consist of several subpages. You can stop the page scrolling in order to read the text at your own pace.

Press VIDEO/HOLD.
HOLD appears in the top left corner of the screen.

To resume normal Teletext operation, press TEXT.

Using FASTEXT

This feature allows you to quickly access a Teletext page that uses FASTEXT. When a FASTEXT page is broadcast, a color-coded menu appears at the bottom of the screen. The colors of the menu correspond to the red (TV/VIDEO), green (FREEZE), yellow (SWAP) and blue (PIP) buttons on the remote commander. These colored buttons function as the FASTEXT buttons in Teletext mode.

Press the colored button which corresponds to the color-coded menu.
The page is displayed after a few seconds.

Enlarging the Teletext display (ENLARGE)

Each time you press A/B/ENLARGE, the Teletext display changes as follows:

→Enlarge upper half→Enlarge lower half→Normal size ┐

Revealing concealed information (REVEAL)

Sometimes pages contain concealed information, such as answers to a quiz. The reveal option discloses the information.

1. **Press MENU.**
2. **Press Δ + or ∇ - to move the cursor (▶) to REVEAL, and press ENTER.**
3. **Press Δ + or ∇ - to select ON, and press ENTER.**

To conceal the information again, select OFF.

Watching a TV program while waiting for a requested Teletext page (TEXT CLEAR)

1. **Select the Teletext page to which you want to refer.**
2. **Press MENU.**
3. **Press Δ + or ∇ - to move the cursor (▶) to TEXT CLEAR, and press ENTER.**
4. **When the page number is displayed on the screen, press TEXT to switch the Teletext on.**

To restore the normal Teletext reception, press TEXT.

Displaying subtitles (SUBTITLES)

Your Teletext service informs you if a TV program is subtitled.

1. **Press MENU.**
2. **Press Δ + or ∇ - to move the cursor (▶) to SUBTITLES, and press ENTER.**

Note
- If the subtitles are not broadcast on page 888, select the subtitle page using the number buttons.

Displaying a Teletext page at the requested time (TIME PAGE)

You can display a time-coded page (e.g. an alarm page) at the time you preset.

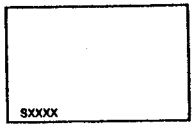
1. **Press MENU.**
2. **Press Δ + or ∇ - to move the cursor (▶) to TIME PAGE, and press ENTER.**
3. **Press the number buttons to enter four digits for the desired time. For example, to enter 7:30, press 0,7,3 and 0.**

At the requested time, the page appears on the screen.

To restore the normal Teletext reception, press TEXT.

Displaying a particular page among several subpages (SUBPAGE)

1. **Press MENU.**
2. **Press Δ + or ∇ - to move the cursor (▶) to SUBPAGE, and press ENTER.**
3. **Press the number buttons or PROGR +/- to enter four digits for the desired subpage. For example, to display the second page of a sequence, press 0, 0, 0 and 2.**



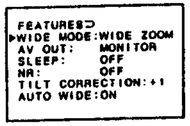
Customizing the TV

Using the AV OUT (advance rec-out) terminal

You can select the output signal from the MON/TV OUT jacks at the rear of the TV.
The S Video output can be used only when MONITOR is selected. However, it cannot be used in Program Index or Strobe mode even though MONITOR is selected.

1 **Press MENU.**

2 **Press Δ + or ∇ – to select FEATURES, and press ENTER.**



```
 FEATURES⊃
▶WIDE MODE:WIDE ZOOM
 AV OUT:    MONITOR
 SLEEP:     OFF
 NR:        OFF
 TILT CORRECTION:+1
 AUTO WIDE:ON
```

3 **Press Δ + or ∇ – to select AV OUT, and press ENTER.**

4 **Press Δ + or ∇ – to select the output signal, and press ENTER.**

Select	To
TV	Output the TV signal.
MONITOR	Output the signal of the picture you are watching as a monitor.

Selecting a TV program output from MON/TV OUT jacks while using the PIP feature

- For the KV-W28, when watching a TV program in the main screen, use PROGR +/–. When watching a video input in the main screen and a TV program in the PIP screen, use PIP PROGR +/– on the remote commander.
  For the KV-W32, use PROGR +/–.

Note

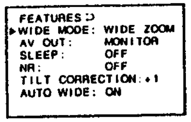
- Do not change the channel while recording with a VCR through the MON/TV OUT jacks. If you change the channel, it also changes the channel you are recording.

Adjusting the tilt of the picture

You can adjust the tilt of the picture if it is not aligned to the TV screen. This may happen due to the direction of the earth's magnetic fields in relation to the position of the TV.

1 **Press MENU.**

2 **Press Δ + or ∇ – to select FEATURES, and press ENTER.**



```
 FEATURES⊃
▶WIDE MODE: WIDE ZOOM
 AV OUT:    MONITOR
 SLEEP:     OFF
 NR:        OFF
 TILT CORRECTION:+1
 AUTO WIDE: ON
```

3 **Press Δ + or ∇ – to select TILT CORRECTION, and press ENTER.**

4 **Press Δ + or ∇ – to select the most suitable value to align the picture position, and press ENTER.**

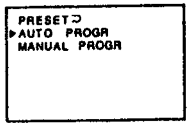
TILT CORRECTION:
-5 – -4 – -3 – -2 – -1 – 0 – +1 – +2 – +3 – +4 – +5
press ∇ –   press Δ +

Presetting channels manually

To change the program position for a channel or to receive a channel with a weak signal, preset the channel manually.
For example, preset a channel in program position 8.

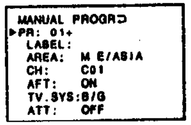
1 **Press MENU.**

2 **Press Δ + or ∇ – to move the cursor (▶) to PRESET, and press ENTER.**



```
 PRESET⊃
▶AUTO PROGR
 MANUAL PROGR
```

3 **Press Δ + or ∇ – to select MANUAL PROGR, and press ENTER.**



```
 MANUAL PROGR⊃
▶PR: 01+
  LABEL:
  AREA:   M E/ASIA
  CH:     C01
  AFT:    ON
  TV.SYS:B/G
  ATT:    OFF
```

4 **Select the program position to which you want to preset a channel.**
(1) Press Δ + or ∇ – to select PR, and press ENTER.
(2) Press Δ + or ∇ – to select 8.
You can also select the program position with PROGR +/– or the number buttons (e.g. for program 24, press -/--, 2 and 4).
(3) Press ENTER.

5 **Select your area (channel system).**
For the areas allocated in each channel system, see "Channel allocation" on page 24.
(1) Press Δ + or ∇ – to select AREA, and press ENTER.
(2) Press Δ + or ∇ – to select your area, and press ENTER.

6 **Select a channel which you want to preset.**
(1) Press Δ + or ∇ – to select CH, and press ENTER.
(2) Press Δ + or ∇ – until the channel you want appears on the screen.
You can also select the channel directly using the number buttons. Press C (once for VHF/UHF channels, twice for cable TV channels), then the number buttons (e.g., for channel 5, press 0 and 5).
(3) Press ENTER.

To preset other channels
Repeat steps 4 to 6.

Disabling program positions

By disabling unused or unwanted program positions, you can skip those positions when you press PROGR +/–.
For example, disable program position 8.

1 **Display the MANUAL PROGR menu. (Follow steps 1 to 3 in "Presetting channels manually" on page 19.)**

2 **Press Δ + or ∇ – to move the cursor (▶) to PR, and press ENTER.**

3 **Press PROGR + or – until 8 appears.**

4 **Press Δ + or ∇ – to select "–", and press ENTER.**
To skip other program positions, repeat steps 3 and 4.

To restore the skipped program positions
In step 4 above, press Δ + or ∇ – to select "+," and press ENTER.

Customizing channel names

You can caption each channel number using up to five letters to be displayed on the screen.

1 **Display the MANUAL PROGR menu. (Follow steps 1 to 3 in "Presetting channels manually" on page 19.)**

2 **Press Δ + or ∇ – to move the cursor (▶) to PR, and press ENTER.**

3 **Press Δ + or ∇ – to select the program position you want to caption and press ENTER.**

4 **Press Δ + or ∇ – to move the cursor (▶) to LABEL, and press ENTER.**

5 **Press Δ + or ∇ – to select a letter or number, and press ENTER for each caption space (up to five.)**
Each time you press Δ + or ∇ –, the letter (number) changes as shown below.
A→B→...→Z→0→1→...→9→ – →:→/→. →
+→_ (space)
For the caption space you want to leave blank, select "_."

6 **Repeat steps 2 to 5 to caption other channels.**

To erase a caption
In step 5 above, select "_ (space)."

Manual fine-tuning

Normally, the automatic fine-tuning (AFT) is operating. However, if the picture of a channel is distorted, you can use the manual fine-tuning function for the channel to obtain better picture reception.

1 **Display the MANUAL PROGR menu. (Follow steps 1 to 3 in "Presetting channels manually" on page 19.)**

2 **Press Δ + or ∇ – to move the cursor (▶) to PR, and press ENTER.**

3 **Press Δ + or ∇ – to select the program position corresponding to the channel which you want to manually fine-tune, and press ENTER.**

4 **Press Δ + or ∇ – to move the cursor (▶) to AFT, and press ENTER.**

5 **Press Δ + or ∇ – to select OFF, and press ENTER.**

6 **Press Δ + or ∇ – to fine-tune the channel so that you get the best TV reception.**
As you press these buttons, the frequency changes from –128 to +128.

7 **After fine-tuning, press ENTER.**
The fine-tuned level is stored.

Improving TV signal

If the reception signal is very strong, you can attenuate it to obtain better picture reception.

1 **Display the MANUAL PROGR menu. (Follow steps 1 to 3 in "Presetting channels manually" on page 19.)**

2 **Press Δ + or ∇ – to move the cursor (▶) to PR, and press ENTER.**

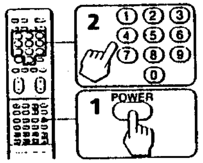
3 **Press Δ + or ∇ – to select the program position corresponding to the channel whose signal is very strong, and press ENTER.**

4 **Press Δ + or ∇ – to move the cursor (▶) to ATT, and press ENTER.**

5 **Press Δ + or ∇ – to select ON, and press ENTER.**

Setting the remote command mode

You can use the supplied remote commander to operate the TV and Sony video equipment, such as a VCR or multi-disc player. To operate Sony video equipment, first set the remote command mode for the video equipment you want to use.

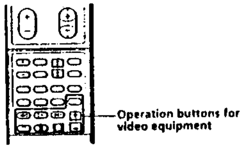


1 **Press and hold the POWER button in the VCR control area.**

2 **Press the number buttons that correspond to the remote command mode.**

Mode number buttons	Remote command mode
0 and then 1	VTR1 (e.g., Beta format VCR)
0 and then 2	VTR2 (e.g., 8 mm format VCR)
0 and then 3	VTR3 (e.g., VHS format VCR)
0 and then 4	MDP (multi-disc player)

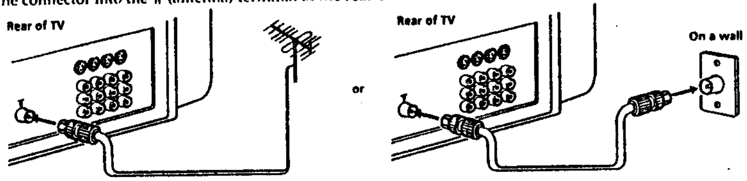
After setting the remote command mode, you can use the following buttons to operate the video equipment.


Operation buttons for video equipment

Connections

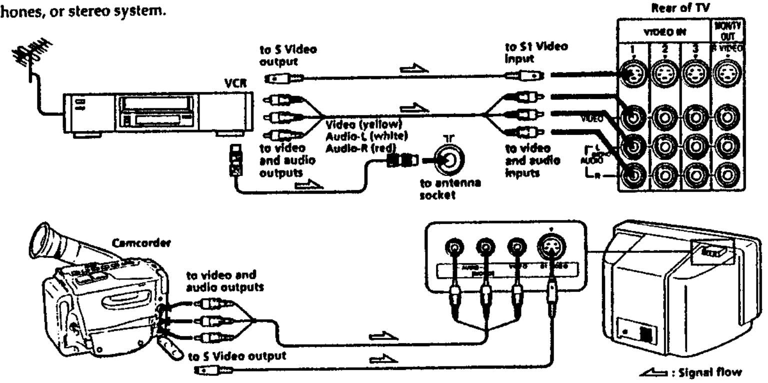
Connecting a VHF antenna or a combination VHF/UHF antenna—75-ohm coaxial cable (round)

Attach an optional IEC antenna connector to the 75-ohm coaxial cable.
Plug the connector into the ⊤ (antenna) terminal at the rear of the TV.


Rear of TV
or
Rear of TV
On a wall

Connecting optional equipment

You can connect optional audio/video equipment to this TV such as a VCR, multi-disc player, camcorder, headphones, or stereo system.


Rear of TV
VIDEO IN
MONITY OUT
1
2
3
S VIDEO
VCR
to S Video output
to S1 Video input
Video (yellow)
Audio-L (white)
Audio-R (red)
to video and audio outputs
to antenna socket
to video and audio inputs
VIDEO
L
AUDIO
R
Camcorder
to video and audio outputs
to S Video output
: Signal flow

When connecting a monaural VCR
Connect the yellow plug to VIDEO and the white plug to AUDIO-L (mono).

Note on the S1 Video signal
When the S1 Video signal is input through the VIDEO IN 1/2/3 jack, set AUTO WIDE to OFF if you do not want to display the picture in full wide mode (see page 11).

If both S Video and video signals are input
The S Video input signal is selected. To view a video signal, disconnect the S Video connection.

Note on the video input
When no signal is input, the screen becomes blue.

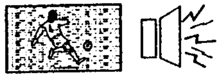
When connecting a VCR to the VIDEO IN 3 jacks
This TV is equipped with two sets of the VIDEO IN 3 jacks. Two sets are not available to be used at the same time. When using equipment connected, turn off other equipment not in use.

Troubleshooting

If you have any problems, read this manual again and check the countermeasure for each of the symptoms listed below.

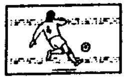
If the problem persists, contact your nearest authorized service center or dealer.

Snowy picture
Noisy sound



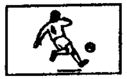
- → Check the antenna.
- → Check the antenna connection on the TV and on the wall.

Dotted lines or stripes



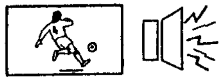
- → This may be caused by local interference (e.g. cars, neon signs, hair dryers, etc.) Adjust the antenna for minimum interference.

Double images or "ghosts"



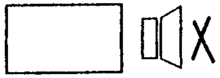
- → This may be caused by reflections from nearby mountains or buildings. A highly directional antenna may improve the picture.

Good picture
Noisy sound



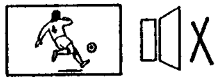
- → Check the TV SYSTEM setting.

No picture
No sound



- → Press POWER.
- → Press POWER to turn the TV off for 5 to 6 seconds, then turn it on again by pressing POWER.
- → Check the antenna connection.
- → Check the VCR connections.

Good picture
No sound



- → Press VOL +.
- → Press MUTING.

No color

- → Adjust COLOR in the VIDEO CONTROL menu's ADJUSTMENT option.
- → Check the COLOR SYSTEM setting.

TV cabinet creaks

- → Even if the picture or the sound is normal, changes in the room temperature sometimes make the TV cabinet expand or contract, making a noise. This does not indicate a malfunction.

Channel allocation

Areas allocated in each channel system

M E/ASIA/CATV W EURO
Afghanistan, Albania, Algeria, Austria, Bahrain, Bangladesh, Belgium, Brunei, Canary Islands, Cyprus, Denmark, Egypt, Finland, Germany, Ghana, Gibraltar, Greece, Iceland, India, Indonesia, Iran, Iraq, Italy, Jordan, Kenya, Republic of Korea, Kuwait, Lebanon, Liberia, Libya, Luxemburg, Malaysia, Malta, Mauritania, Mauritius, Maldives Rep., Morocco, Mozambique, Nepal, Netherlands, New Zealand, Nicaragua, Nigeria, Norway, Oman, Pakistan, Portugal, Qatar, Sarawak, Saudi Arabia, Seychelles, Sierra Leone, Singapore, Spain, Srilanka, Sudan, Swaziland, Sweden, Switzerland, Syrian Arab Rep., Tanzania, Thailand, Tunisia, Turkey, Uganda, United Arab Emirates, Western Sahara, Yemen Arab Republic, People's Dem. Rep. of Yemen, Yugoslavia, Zambia, Zimbabwe

AUSTRALIA
Australia, New Zealand

HK/UK
Hong kong, Ireland, Lesotho, South Africa, United Kingdom

CHINA/E EURO
Benin, Bulgaria, China, Congo, Czechoslovakia, Djibouti Republic, Gabon, Guadeloupe, Guiana, Guinea (P.P.R.), Hungary, Ivory Coast, Dem. People's Rep. of Korea, Madagascar, Mongolia, New Caledonia, Niger, Poland, Reunion, Rumania, Senegal, Tahiti, Togo, Former U.S.S.R., Vietnam, Zaire

AMERICA/CATV AMERICA
Bahama Islands, Barbados, Belize, Bermuda, Bolivia, Burma (UHF), Canada, Chile, Colombia, Costa Rica, Cuba, Dominica Republic, Ecuador, El Salvador, Guam, Guatemala, Haiti, Hawaii, Honduras, Jamaica, Laos, Mexico, Panama, Peru, Philippines, Puerto Rico, Surinam, Taiwan, Trinidad & Tobago, U.S.A., U.S.A. (CATV), Venezuela

JAPAN
Burma (Myanmar) (VHF), Japan (VHF, UHF)

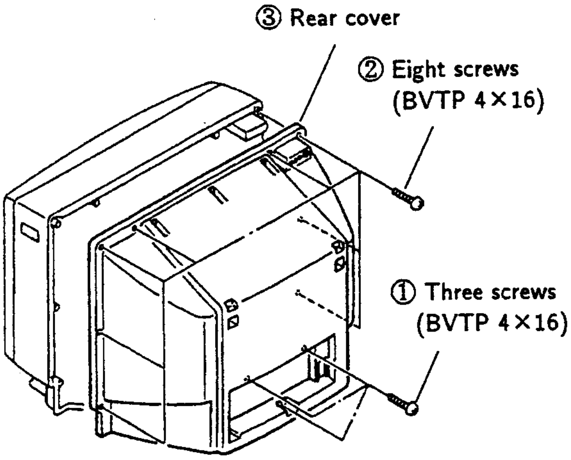
TV and color systems of each channel system

The TV system and color system are automatically set according to the channel system.

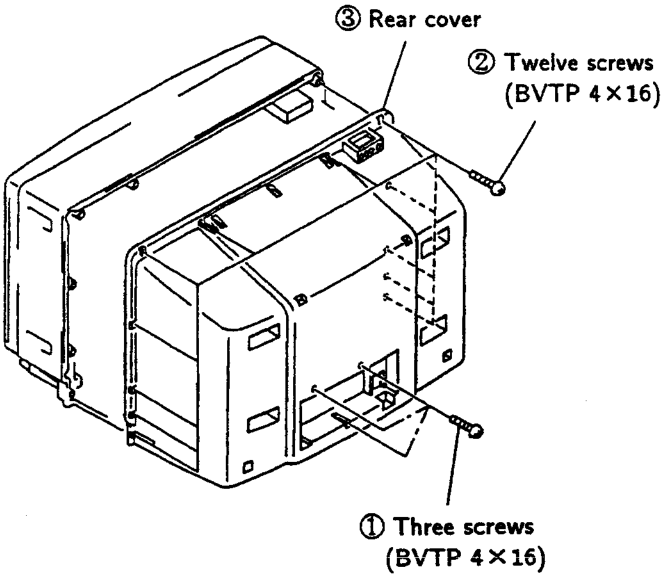
Channel system	TV system	Color system
M E/ASIA/ CATV W EURO	B/G, H: West European TV standard	AUTO
AUSTRALIA	B/G, H: Australian TV standard	AUTO
HK/UK	I: British TV standard	AUTO
CHINA/E EURO	D/K: East European TV standard	AUTO
AMERICA/CATV AMERICA	M: American TV standard	AUTO
JAPAN	M: Japan TV standard	AUTO

SECTION 2
DISASSEMBLY

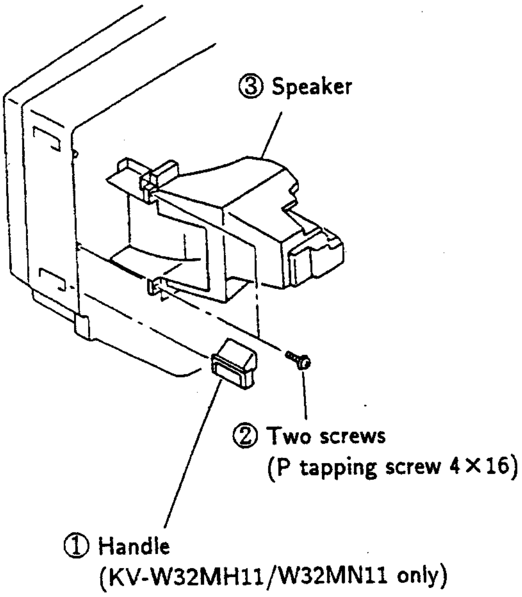
2-1-1. REAR COVER REMOVAL (KV-W28MH11/W28MN11 only)


③ Rear cover
② Eight screws
(BVTP 4×16)
① Three screws
(BVTP 4×16)

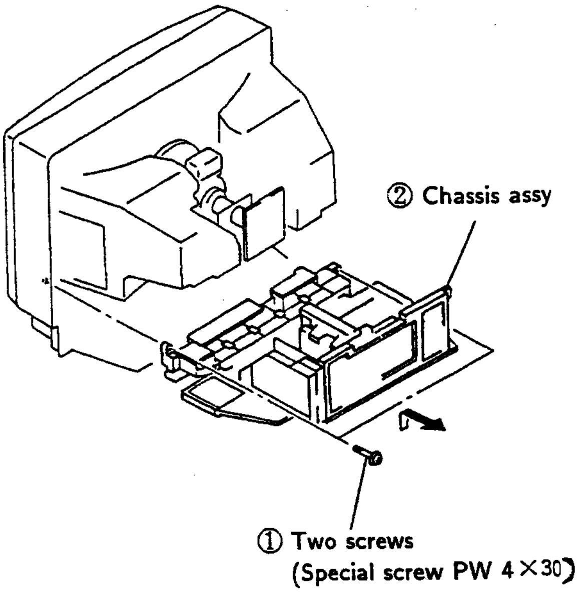
2-1-2. REAR COVER REMOVAL (KV-W32MH11/W32MN11 only)


③ Rear cover
② Twelve screws
(BVTP 4×16)
① Three screws
(BVTP 4×16)

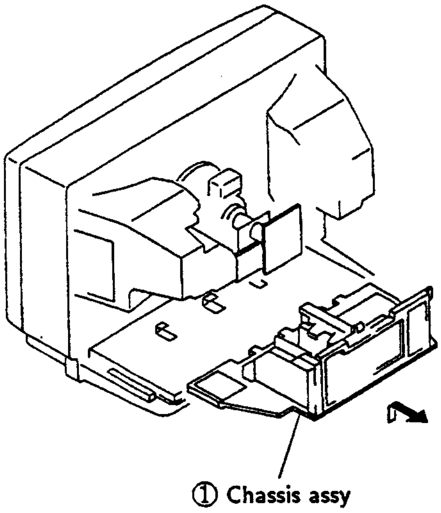
2-2. SPEAKER REMOVAL


③ Speaker
② Two screws
(P tapping screw 4×16)
① Handle
(KV-W32MH11/W32MN11 only)

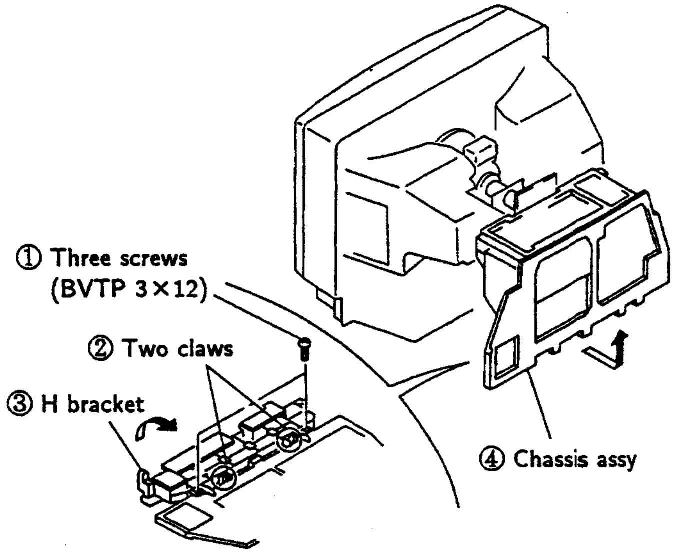
2-3-1. CHASSIS ASSY REMOVAL (KV-W28MH11/W28MN11 only)


② Chassis assy
① Two screws
(Special screw PW 4×30)

2-3-2. CHASSIS ASSY REMOVAL (KV-W32MH11/W32MN11 only)

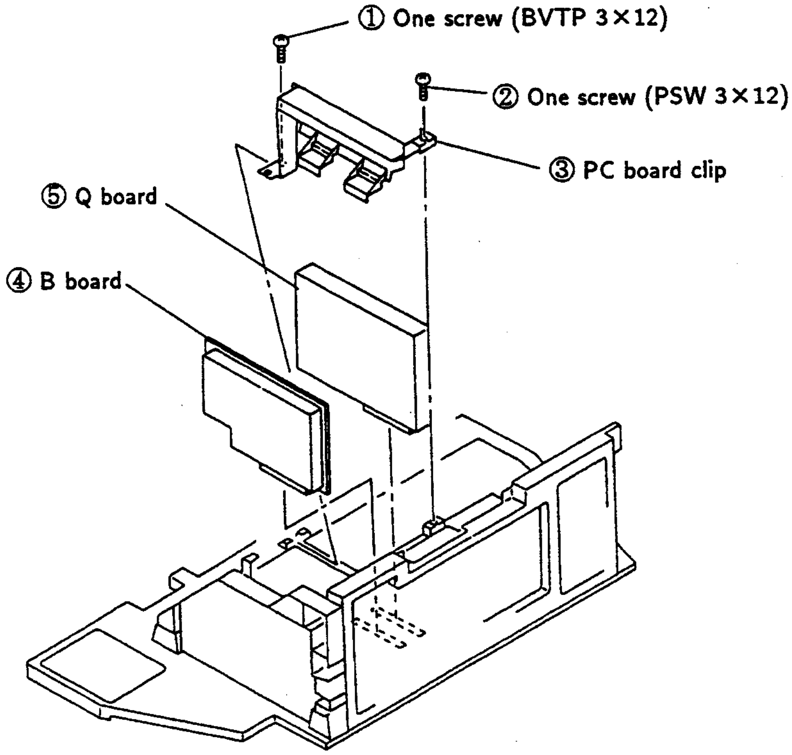

① Chassis assy

2-4. SERVICE POSITION

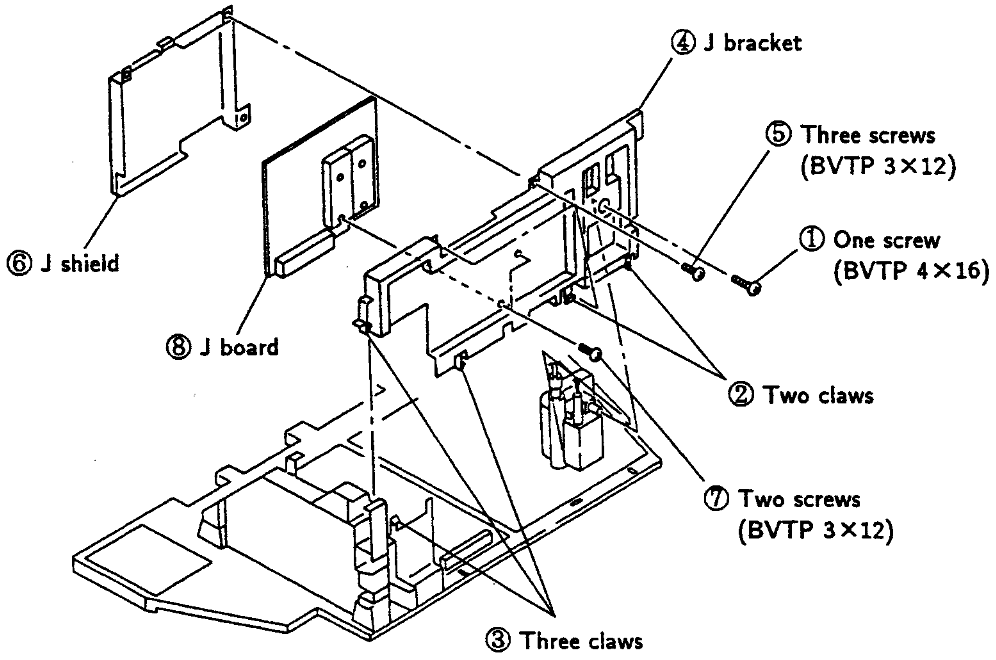

① Three screws
(BVTP 3×12)
② Two claws
③ H bracket
④ Chassis assy

(KV-W28MH11/W28MN11 only)

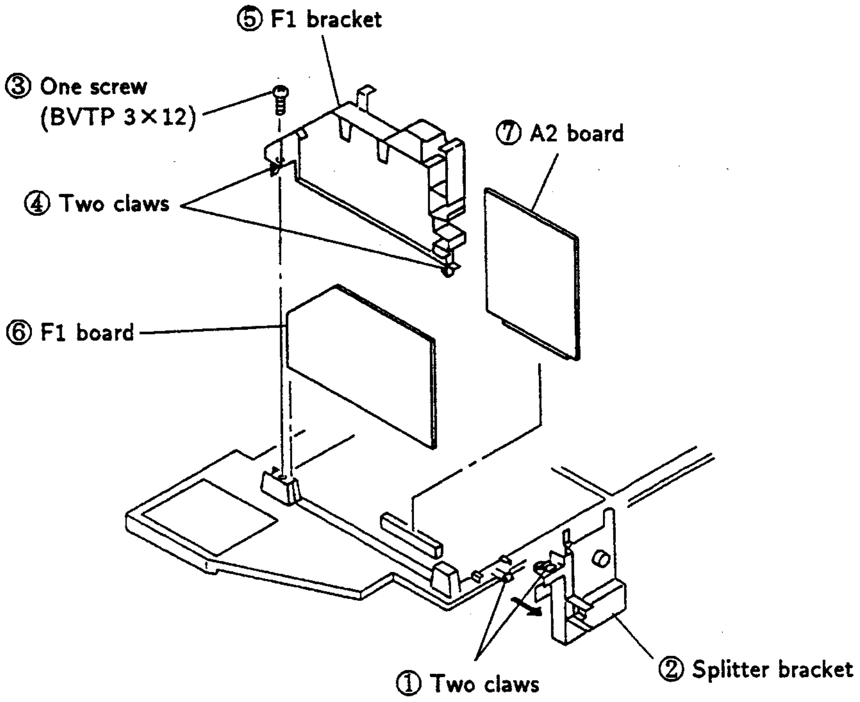
2-5. B AND Q BOARDS REMOVAL


① One screw (BVTP 3×12)
② One screw (PSW 3×12)
③ PC board clip
⑤ Q board
④ B board

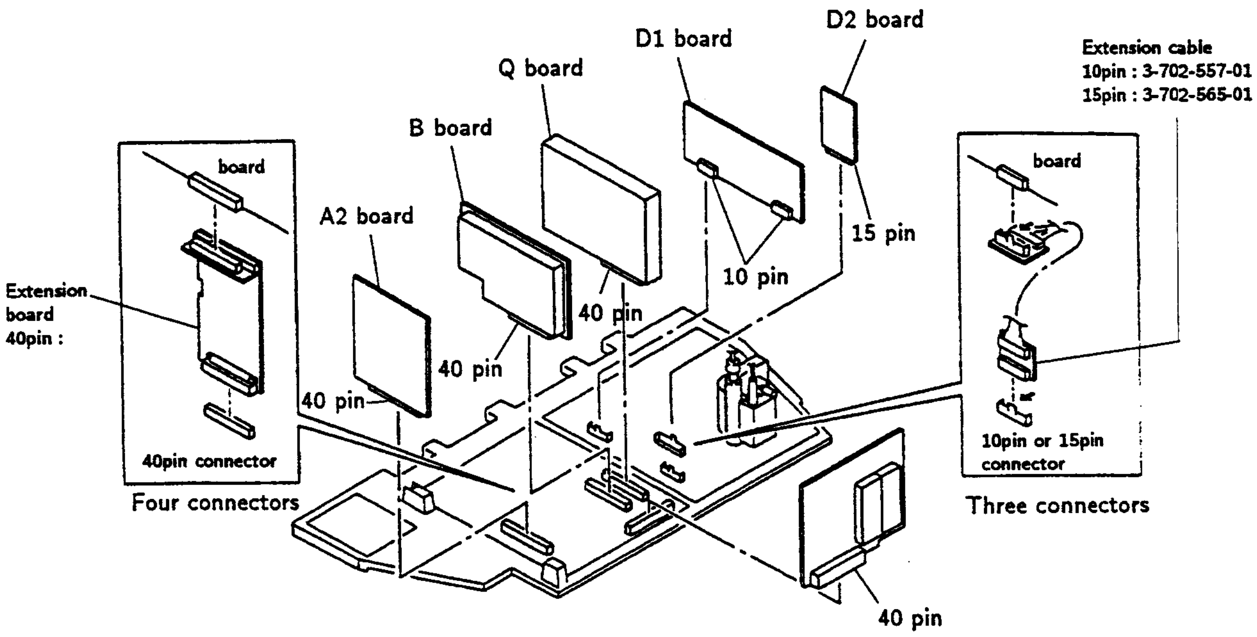
2-6. J BOARD REMOVAL


④ J bracket
⑤ Three screws
(BVTP 3×12)
① One screw
(BVTP 4×16)
⑥ J shield
⑧ J board
② Two claws
⑦ Two screws
(BVTP 3×12)
③ Three claws

2-7. F1 AND A2 BOARDS REMOVAL

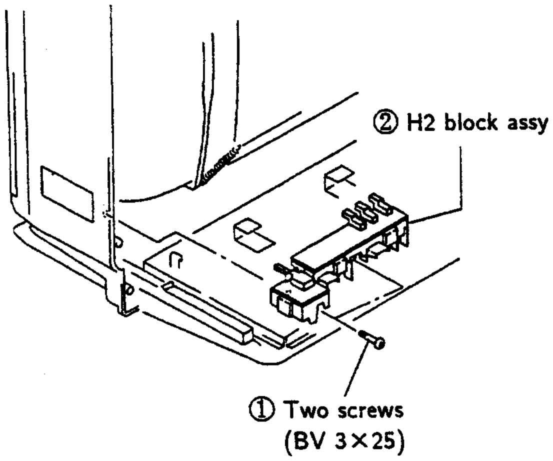

⑤ F1 bracket
③ One screw
(BVTP 3×12)
⑦ A2 board
④ Two claws
⑥ F1 board
① Two claws
② Splitter bracket

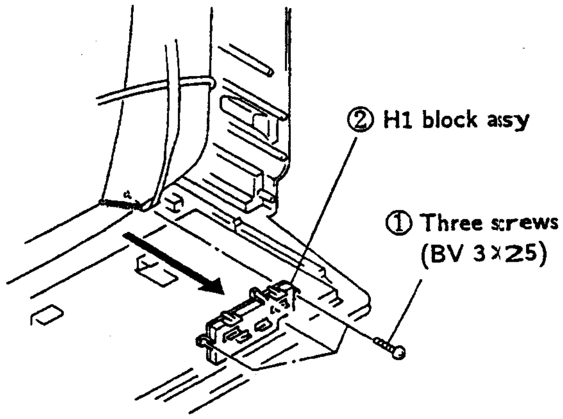
2-8. EXTENSION CABLE AND BOARD


D2 board
D1 board
Q board
B board
A2 board
board
Extension board 40pin :
40pin connector
Four connectors
40 pin
40 pin
40 pin
10 pin
15 pin
40 pin
Extension cable
10pin : 3-702-557-01
15pin : 3-702-565-01
board
10pin or 15pin connector
Three connectors

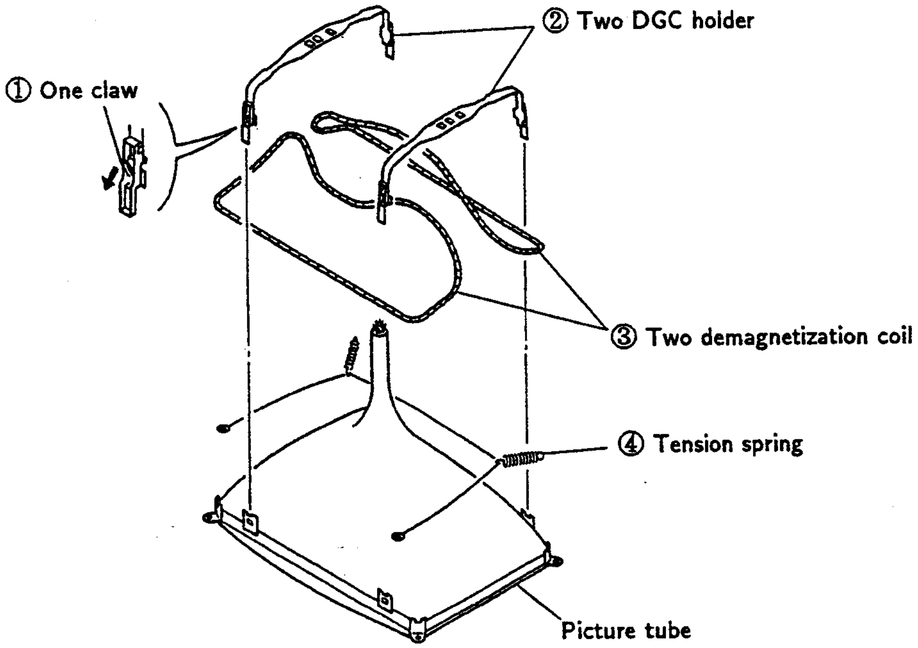
2-9. H2 BLOCK ASSY REMOVAL (KV-W32MH11/W32MN11 only)

2-10. H1 BLOCK ASSY REMOVAL (KV-W32MH11/W32MN11 only)

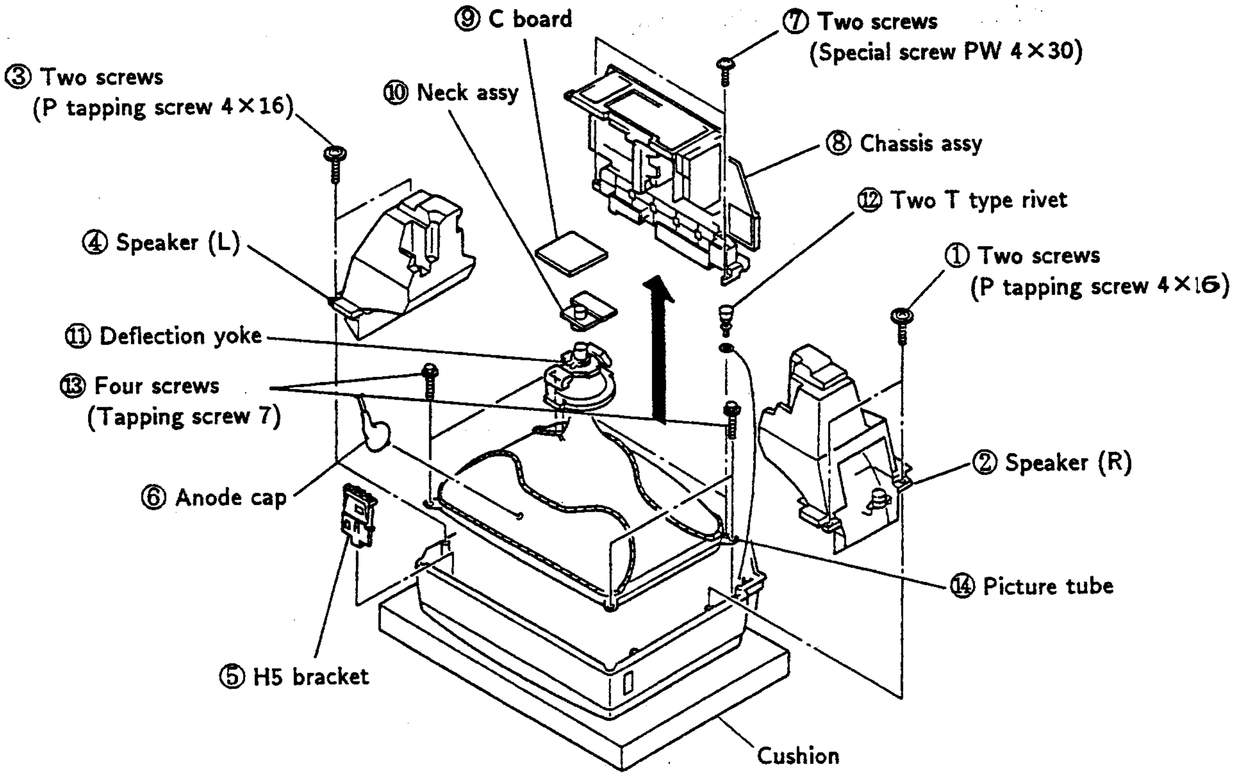

② H2 block assy
① Two screws
(BV 3×25)


② H1 block assy
① Three screws
(BV 3×25)

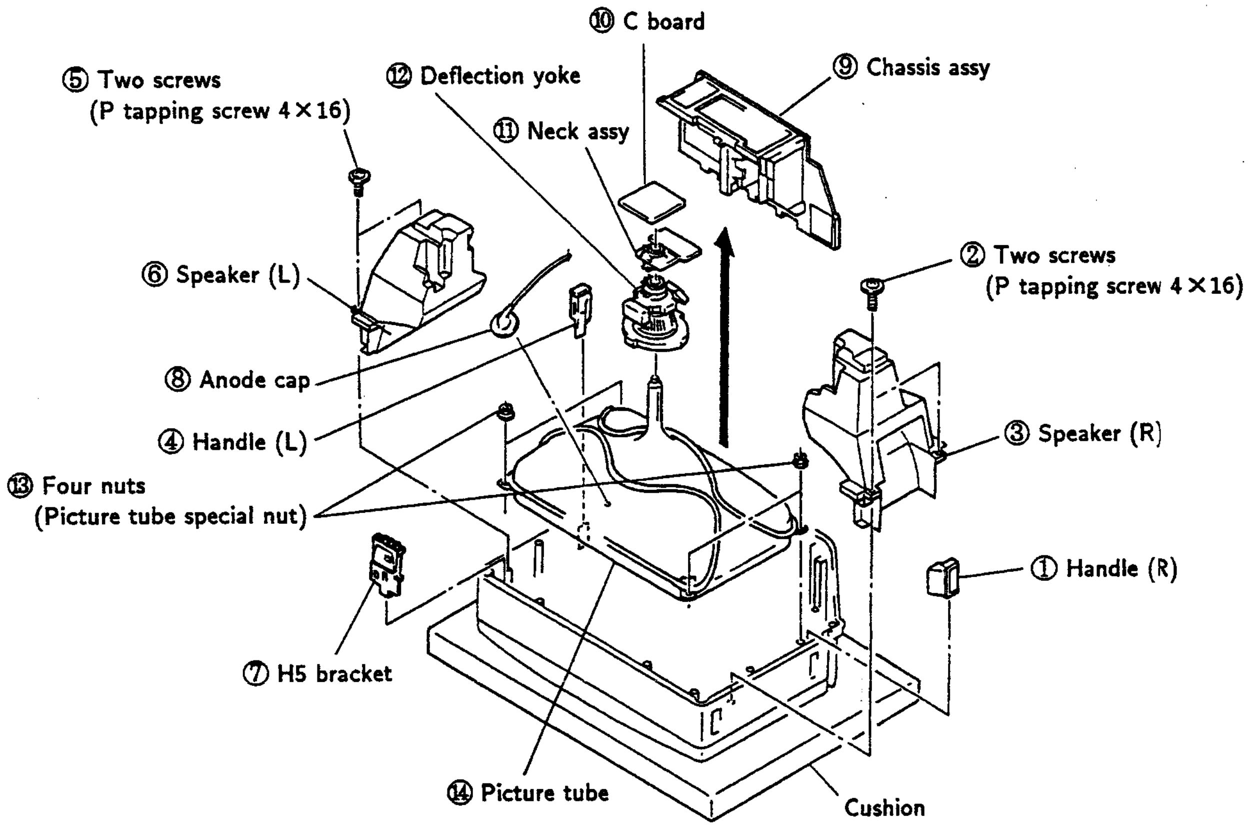
2-11. DEMAGNETIZATION COIL REMOVAL


② Two DGC holder
① One claw
③ Two demagnetization coil
④ Tension spring
Picture tube

2-12-1. PICTURE TUBE REMOVAL (KV-W28MH11/W28MN11 only)


⑨ C board
⑦ Two screws
(Special screw PW 4×30)
③ Two screws
(P tapping screw 4×16)
⑩ Neck assy
⑧ Chassis assy
⑫ Two T type rivet
④ Speaker (L)
① Two screws
(P tapping screw 4×16)
⑪ Deflection yoke
⑬ Four screws
(Tapping screw 7)
② Speaker (R)
⑥ Anode cap
⑭ Picture tube
⑤ H5 bracket
Cushion

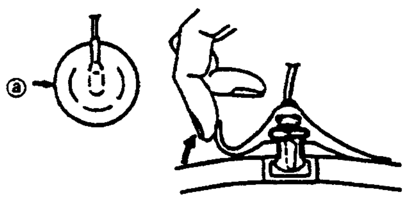
2-12-2. PICTURE TUBE REMOVAL (KV-W32MH11/W32MN11 only)


⑩ C board
⑤ Two screws
(P tapping screw 4×16)
⑫ Deflection yoke
⑨ Chassis assy
⑪ Neck assy
② Two screws
(P tapping screw 4×16)
⑥ Speaker (L)
⑧ Anode cap
④ Handle (L)
③ Speaker (R)
⑬ Four nuts
(Picture tube special nut)
① Handle (R)
⑦ H5 bracket
⑭ Picture tube
Cushion

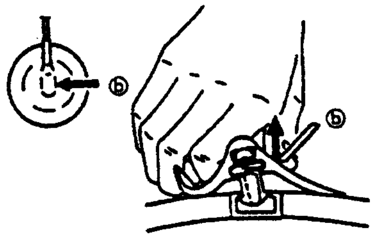
• REMOVAL OF ANODE-CAP

NOTE : Short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT chield or carbon painted on the CRT, after removing the anode.

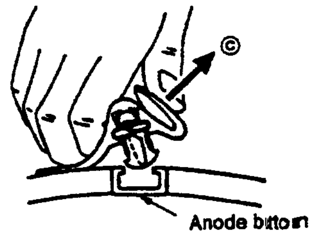
• REMOVING PROCEDURES



① Turn up one side of the rubber cap in the direction indicated by the arrow ⓐ.



② Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow ⓑ.


ⓒ
Anode button

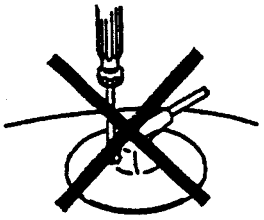
③ When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling up it inthe direction of the arrow ⓒ.

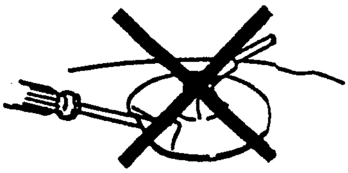
• HOW TO HANDLE AN ANODE-CAP

① Don't hurt the surface of anode-caps with sharp shaped material!

② Don't press the rubber too hard in order not to hurt inside of anode-caps!
A material fitting called as shatter-hook terminal is built in the rubber.

③ Don't turn the foot of rubber over hard!
The shatter-hook terminal will stick out or hurt the rubber.





SECTION 3
SET-UP ADJUSTMENTS

- The following adjustments should be made when a complete realignment is required or a new picture tube is installed.
- These adjustments should be performed with rated power supply voltage unless otherwise noted.

Controls and switch should be set as follows unless otherwise noted:

PICTURE control ···············	RESET
BRIGHTNESS control ·········	CENTER

Perform the adjustments in order as follows :

1. Beam Landing
2. Convergence
3. Focus
4. White Balance

Note : Test Equipment Required.

1. Color-bar/Pattern Generator
2. Degausser
3. Oscilloscope

3-1. BEAM LANDING

Preparations:

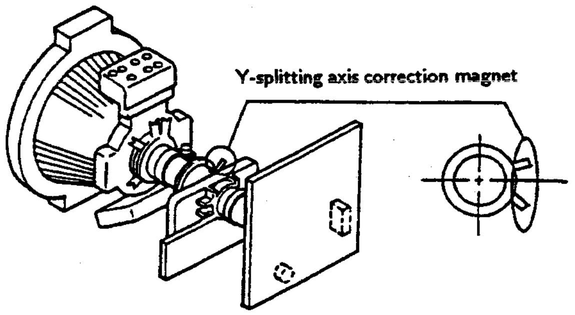
1. In order to reduce the influence of geomagnetism on the set's picture tube face it east or west.
2. Switch on the set's power and degauss with the degausser.

(1) Adjustment of Control Magnet for Y-Splitting Axis

1. Input a crosshatch signal with the pattern generator.
2. Picture control is minimum and brightness control is still normal.
3. Position the neck assy as shown in Fig.3-2.
4. Move the deflection yoke forward to touch the CRT and it stands up rightly.
5. Adjust the upper pin and the lower pin symmetrically by opening or closing the Y-splitting axis correction magnet on the neck assy.
6. Return the deflection yoke to original position.

(2) Landing

1. Input a full-white signal with the pattern generator. Maximize the picture setting and adjust the brightness setting for easy viewing.
2. Rough-adjust the focus, horizontal convergence.
3. Loosen the deflection yoke screws, align the purity adjustment knob to the central position. (See Fig.3-1.)
4. Switch the full-white signal to a mono-green signal.
5. Move the deflection yoke backward and adjust with the purity magnet so that the green is at the center and it aligns symmetrically. (See Fig.3-3.)
6. Move the deflection yoke forward and adjust so that entire screen is green.
7. Switch the raster signal to red, then to blue and verify the landing condition.
8. When the position of the deflection yoke has been decided, fasten the deflection yoke with the screws.
9. If the beam does not land correctly in all the corners, use a magnet to adjust it. (See Fig.3-4.)



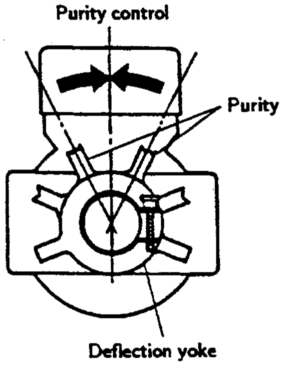
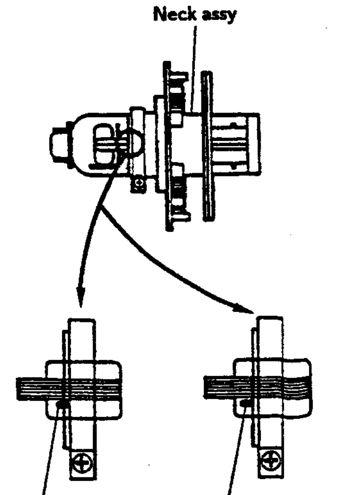


Fig.3-1.



Fit the bottom edge of the neck assy with the G3 hole center. (28 inch)

Fit the bottom edge of the neck assy with the G3 hole edge. (32 inch)

Fig.3-2.

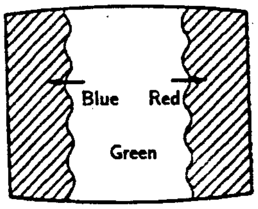


Fig.3-3.

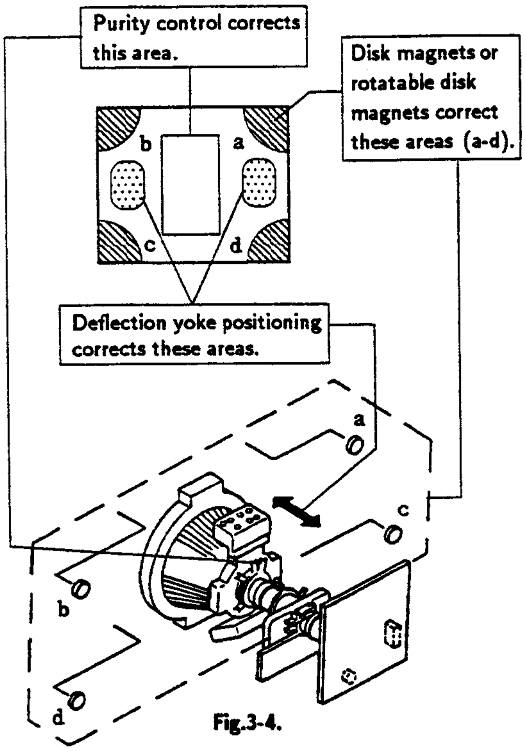

Purity control corrects this area.
Disk magnets or rotatable disk magnets correct these areas (a-d).
b
a
c
d
Deflection yoke positioning corrects these areas.
a
c
b
d

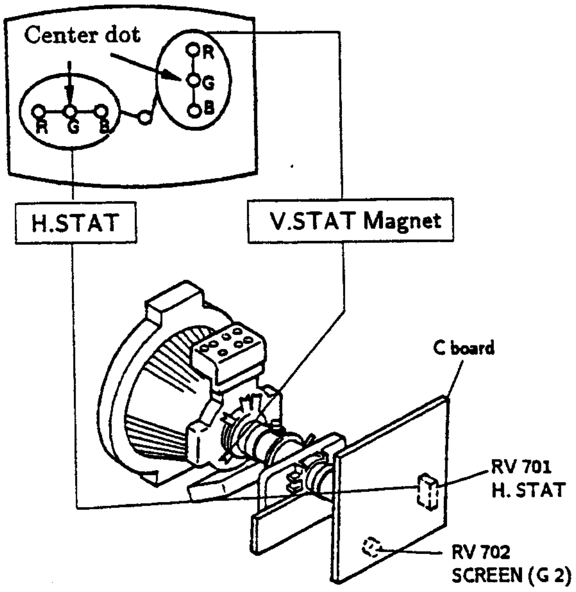
Fig.3-4.

3-2. CONVERGENCE

Preparation :

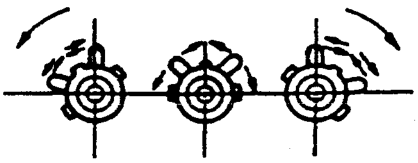
- Before starting this adjustment, adjust the focus, horizontal size, and vertical size.
- Minimize the brightness setting.
- Provide dot pattern.

(1) Horizontal and Vertical Static Convergence

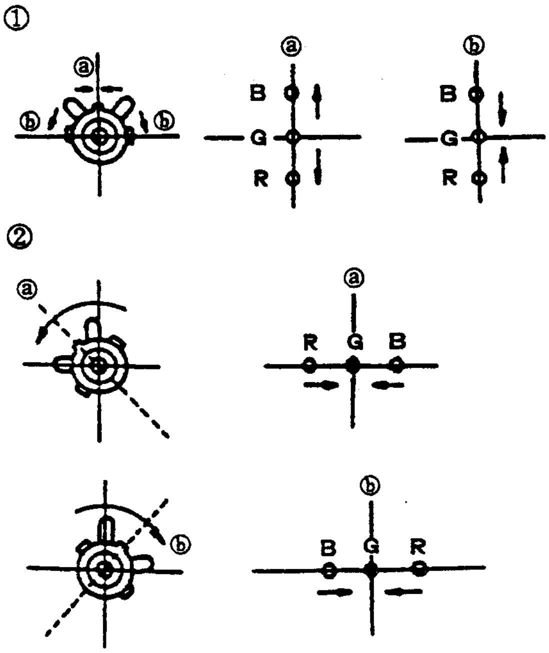

Center dot
R
G
B
R
G
B
H.STAT
V.STAT Magnet
C board
RV 701
H. STAT
RV 702
SCREEN (G 2)

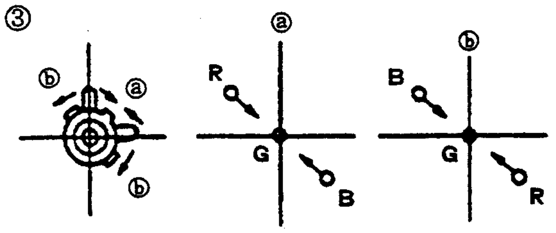
1. (Moving horizontally), adjust the H.STAT control so that the red, green, and blue points are on top of each other at the center of the screen.
2. (Moving vertically), adjust the V.STAT magnet so that the red, green, and blue points are on top of each other at the center of the screen.
3. If the H.STAT variable resistor cannot bring the red, green, and blue points together at the center of the screen, adjust the horizontal convergence with the H. STAT variable resistor and the V.STAT magnet in the manner given below. (In this case, the H.STAT variable resistor and the V.STAT magnet influence each other)

- Tilt the V.STAT magnet and adjust the static convergence by opening or closing the V.STAT magnet.

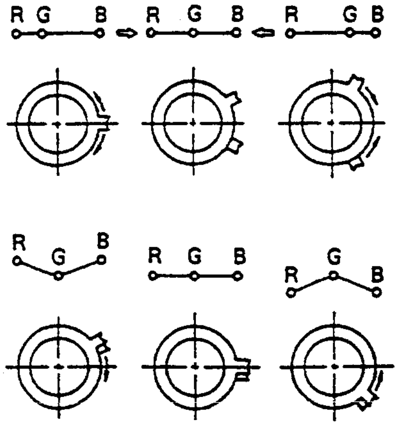


4. If the V.STAT magnet is moved in the direction of the ⓐ and ⓑ arrows, the red, green, and blue points move as shown below.


①
ⓐ
ⓑ
ⓑ
ⓐ
B
G
R
ⓑ
B
G
R
②
ⓐ
ⓐ
R
G
B
ⓑ
ⓑ
B
G
R

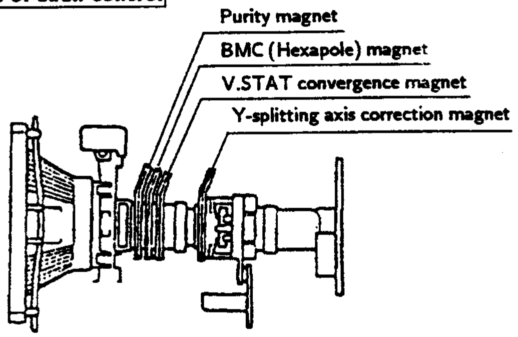


- Operation of BMC (Hexapole) Magnet


R G B
R G B
R G B
R G B
R G B
R G B

- The respective dot positions resulting from moving each magnet interact, so be sure to perform adjustment while tracking.
  Use the H.STAT VR to adjust the red, green, and blue dots so they coincide at the center of screen (by moving the dots in the horizontal direction).

Layout of each control

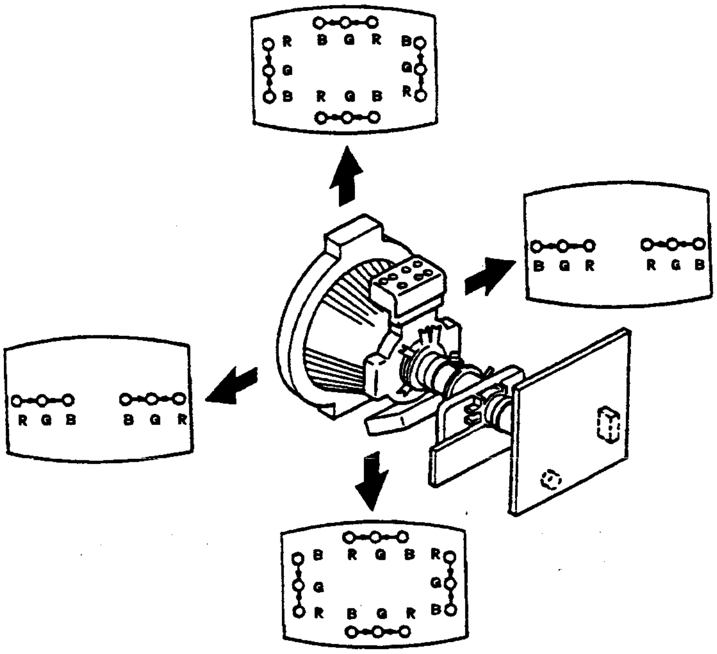

Purity magnet
BMC (Hexapole) magnet
V.STAT convergence magnet
Y-splitting axis correction magnet

(2) Dynamic Convergence Adjustment

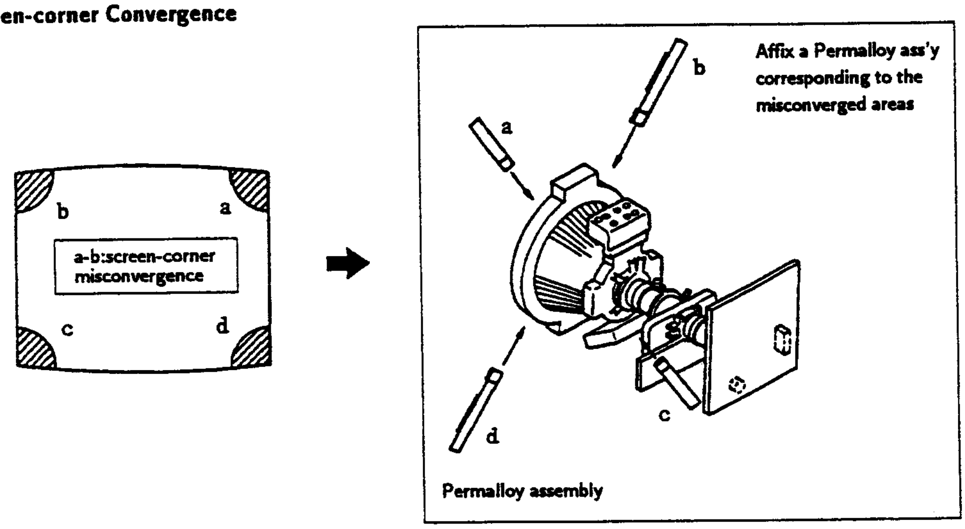
Preparations :

- Before starting this adjustment, adjust the horizontal static convergence and the vertical static convergence.

1. Slightly loosen the deflection yoke screws.
2. Remove the deflection yoke spacer.


R B G R B
G G
B R G B R
R G B B G R
B G R R G B
B R G B R
G G
R B G R B

(3) Screen-corner Convergence

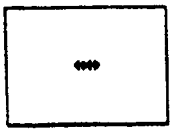


Affix a Permalloy ass'y corresponding to the misconverged areas

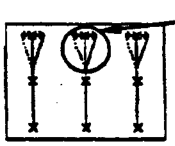
Permalloy assembly

Item number	Adj. Item	Data range	Standard DATA	Note	Device
			W5 W6 Z5 Z6 S5 S6 No/Fu 5 No/Fu 6 MP		
37	DCS	00~3F	1 F	DC Shift	(CXA 1526 P)
38	HAP	00~3F	1 F	H. Amp	(CXA 1526 P)
39	HTL	00~3F	1 F	H. Tilt	(CXA 1526 P)
3A	UYB	00~3F	1 F	Upper Y Bow	(CXA 1526 P)
3B	LYB	00~3F	1 F	Lower Y Bow	(CXA 1526 P)
3C	UCB	00~3F	1 F	Upper Corner Bow	(CXA 1526 P)
3D	UTL	00~3F	1 F	Upper Tilt	(CXA 1526 P)
3E	LCB	00~3F	1 F	Lower Corner Bow	(CXA 1526 P)
3F	LTL	00~3F	1 F	Lower Tilt	(CXA 1526 P)

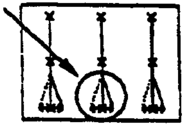
R.G.B.dots movement on the screen of the set



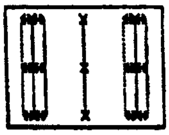
DC SHIFT
Fine adjustment of H.stat



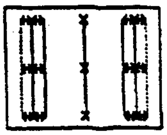
UPPER Y BOW
Adjustment of Y.BOW of the upper section of the screen.



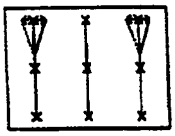
Standard LOWER Y BOW
Adjustment of Y.BOW of the lower section of the screen.



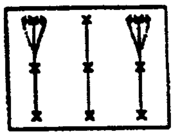
H.AMP
H.AMP adjustment



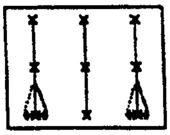
H.TILT
H.TILT adjustment



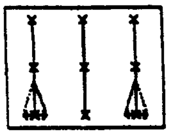
UPPER COR BOW
Adjustment of C.BOW of the upper section of the screen.



UPPER TILT
Adjustment of TILT of the upper section of the screen.



LOWER COR BOW
Adjustment of C.BOW of the lower section of the screen.



LOWER TILT
Adjustment of TILT of the lower section of the screen.

At this time, H.TILT, H.AMP, UPPER TILT, UPPER COR, BOW, LOWER TILT, and LOWER COR, BOW look like all the same, but the movement of the right and left dots are reverse in all the TILT system. (Pay attention to the dotted lines.)

(4)Dynamic convergence adjustment

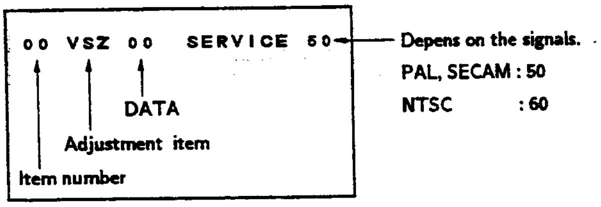
1. Adjust horizontal convergence located at the center position of the screen with H STAT VR.
2. Dynamic convergence adjustments are made with the RM-850 that comes with this unit.

Entering service mode

With the unit on standby
⇩
"DISPLAY"
⇩
"5"
⇩
"VOL (+)"
⇩
"POWER"

This operation sequence puts the unit into service mode.

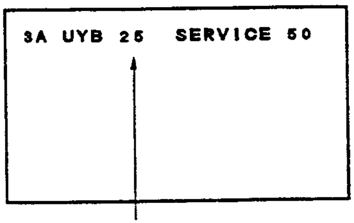
The screen display


00 VSZ 00 SERVICE 50
DATA
Adjustment item
Item number
Depens on the signals.
PAL, SECAM : 50
NTSC : 60

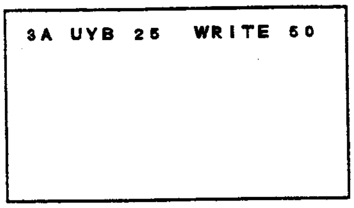
"1", "4"	Raise/lower the service item number
"3", "6"	Raise/lower the data
"MUTE"	Writes
"0"	Executes the writing

Item Number 3A
This explanation uses UYBOW as an example.

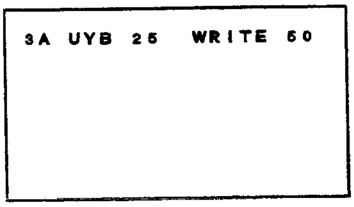
1. Select 3A UYBOW with the "1" and "4" buttons.
2. Raise/lower the data with the "3" and "6" buttons.
3. Select the optimum staste.
4. Write with the MUTE button. (The display changes to WRITE.)
5. Execute the writing with the "0" button.


3A UYB 25 SERVICE 50

Adjusted with "3" and "6" buttons


3A UYB 25 WRITE 50

Written with "MUTE"

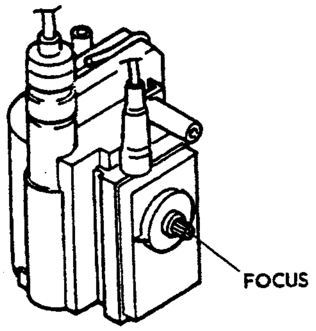

3A UYB 25 WRITE 50

Write excuted with "0"

"1", "4"	Select the adjustment item.
↓	
"3", "6"	Raise/lower the data.
↓	
"MUTE"	Writes.
↓	
"0"	Executes the writing.

3-3. FOCUS ADJUSTMENT

Adjust FOCUS control on the flyback transformer for a best focus.

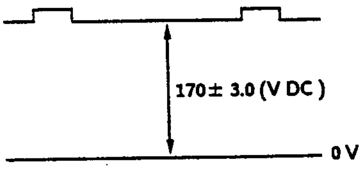


FLYBACK TRANSFORMER (T503)

3-4. G2 (SCREEN), SUB PICTURE AND WHITE BALANCE ADJUSTMENTS

(1) G2 (SCREEN) ADJUSTMENT (RV701)

1. Set the PICTURE and BRIGHTNESS to normal.
2. Put to VIDEO input mode without signals.
3. Set to Service Mode. (To turn off Blue Black.)
4. Change BOF data of the item number "1A" from "00" to "01".
5. Connect R, G, and B of the C board cathode to the oscilloscope.
   Adjust R-G, G-G, B-G, data of the item number "0 E ","0 F ", "10 " to the volue below.



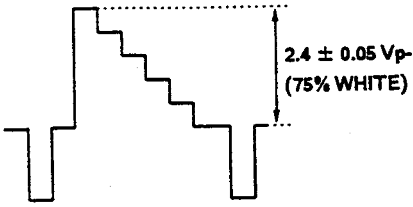
6. Adjust G2 (RV701) volume to make the screen slightly bright.

(2) SUB PICTURE ADJUSTMENT (R-G)

1. Receive a NTSC color-bar (75% WHITE) to set to FULL mode.
2. Set the conditions as follows.

SHARPNESS	·········	minimum	
PICTURE	·········	maximum	
COLOR	·········	minimum	
BRIGHT	·········	50%	
SUB BRIGHT	·········	1 F	DATA
SUB PICTURE	·········	18	

3. Connect an oscilloscope to the pin⑥ (R OUT) of CN 508, D board.
4. Set to Service Mode.
5. Select 0F (G-G) and 10 (B-G) with $\boxed{1}$ and $\boxed{4}$ of the commander and set the data "00" with $\boxed{3}$ and $\boxed{6}$.
6. Select 0E (R-G) with $\boxed{1}$ and $\boxed{4}$, and adjust $\boxed{3}$ and $\boxed{6}$ to get 2.4±0.05 Vp-p level.
7. Press $\boxed{\text{MUTING}}$ → $\boxed{0}$ of the commander to write the data.

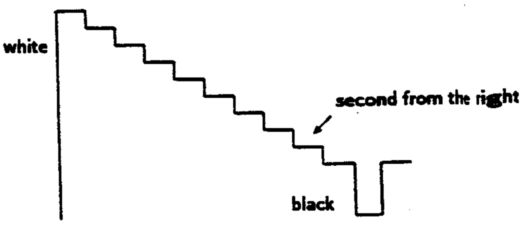


(3) WHITE BALANCE ADJUSTMENTS

1. Input an entire white signal.
2. Set to service mode.
3. Set the PICTURE to maximum.
4. Select G-G (0F) and B-G (10) with $\boxed{1}$ and $\boxed{4}$, and adjust the level with $\boxed{3}$ and $\boxed{6}$ for the best white balance.
5. Set the PICTURE to minimum.
6. Adjust the level with RV705 (B.BKG) and RV704 (G.BKG) for the best white balance.
7. Write into the memory by pressing $\boxed{\text{MUTE}}$ → then $\boxed{0}$.

(4) SUB BRIGHT ADJUSTMENT

1. Set to service mode.
2. Input a staircase signal of black and white from the pattern generator.
3. BRIGHTNESS ··· 50%
   PICTURE ········· minimum
4. Select SBT with $\boxed{1}$ and $\boxed{4}$, and adjust SBT (24) level with $\boxed{3}$ and $\boxed{6}$ so that the stripe second from the right is dimly lit.



SECTION 4
CIRCUIT ADJUSTMENTS

4-1. ADJUSTMENTS WITH COMMANDER

Service adjustments are made with the RM-850 that comes with this unit.

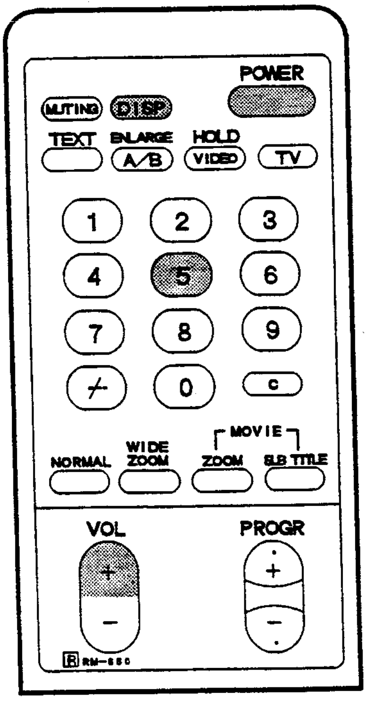
Entering service mode

With the unit on standby
↓
"DISPLAY"
↓
"5"
↓
"VOL (+)"
↓
"POWER"

This operation sequence puts the unit into servise mode.

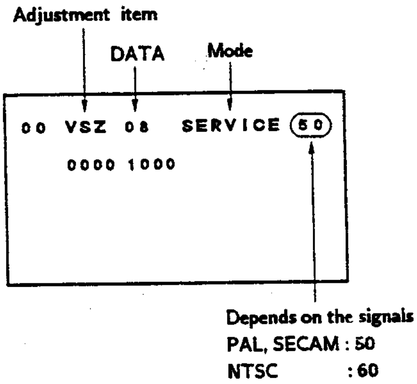
"1", "4"	Raise/lower the service item number
"3", "6"	Raise/lower the data
"MUTE"	Writes
"0"	Executes the writing

"7", "0"	The data all becomes the values in memory
"8", "0"	User control all goes to the standard state
"5", "0"	Service data initialization (Besure not to use usually.)
"DISP", "0"	Write 50Hz adjustment data to 60Hz, or vice versa.
"2", "0"	Data copy of all WIDE modes.


POWER
MUTING
DISP
TEXT
ENLARGE
HOLD
A/B
VIDEO
TV
1
2
3
4
5
6
7
8
9
-/--
0
C
MOVIE
NORMAL
WIDE ZOOM
ZOOM
SUB TITLE
VOL
PROGR
+
−
RM-850

RM-850

The screen display is :


Adjustment item
DATA
Mode
00 VSZ 08 SERVICE 50
0000 1000
Depends on the signals
PAL, SECAM : 50
NTSC : 60

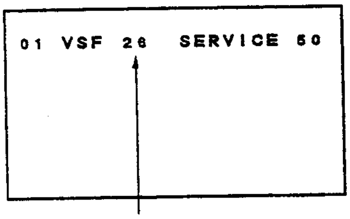
"1", "4" Select the adjustment item.
↓
"3", "6" Raise/lower the data.
↓
"MUTE" Writes
↓
"0" Executes the writing.

4-2. ADJUSTMENT METHOD

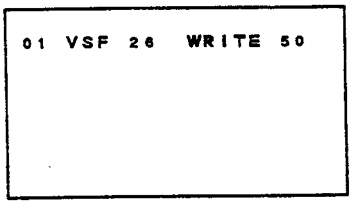
Item Number 01

This explanation uses V-SHFT as an example.

1. Select 01 V-SHFT with the "1" and "4" buttons.
2. Raise/lower the data with the "3" and "6" buttons.
3. Select the optimum state. (The standard setting is for PAL reception.)
4. Write with the MUTE button. (The display changes to WRITE.)
5. Execute the writing with the "0" button.

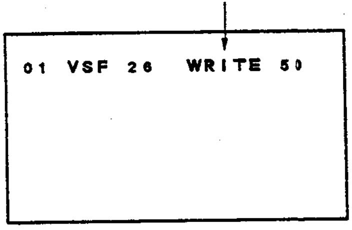


Adjusted with "3" and "6" buttons



Written with "MUTE"

The display returns to a SERVICE.



Write excuted with "0"

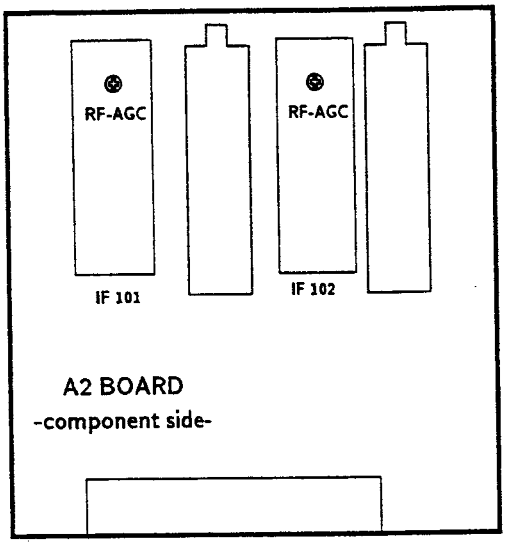
Item number	Adjustment Item	Data range	Standard DATA	Note	Device
			W5 : W6 : Z5 : Z6 : S5 : S6 : No/Fu5 : No/Fu6 : MP		
00	VSZ	00~3F	30	V-Size	CXD2018Q
01	VSF	00~3F	26	V-Shift	
02	SCR	00~0F	04	S-Correction	
03	VLN	00~0F	09	V-Linearity	
04	HSZ	00~3F	2A	H-Size	
05	PAP	00~3F	20	Pin-Amp	
06	TLT	00~1F	10	TILT	
07	UCP	00~0F	07	Upper Corner Pin	
08	LCP	00~0F	06	Lower Corner Pin	
09	VBW	00~0F	08	V-Bow	
0A	VAG	00~0F	08	V-Angle	
0B	HVV	00~07	05	HV-Comp-V	
0C	HVH	00~07	00	HV-Comp-H	
			W5 : W6 : Z5 : Z6 : S5 : S6 : N5 : N6 : F5 : F6 : MP		
0D	HSH	00~3F	20	H Shift	

Item number	Adjustment Item	Data range	Standard DATA	Note	Device
0E	R-G	00~3F	1F	Red Gain	TDA4780/ TDA4686
0F	G-G	00~3F	1F	Green Gain	
10	B-G	00~3F	1F	Blue Gain	
11	RLR	00~3F	1F	Red Level Ref.	
12	GLR	00~3F	1F	Green Level Ref.	
13	BLR	00~3F	1F	Blue Level Ref.	
14	PDL	00~3F	29	Peak Drive Limit	
15	GMM	00~3F	1F	γ	
16	SC5	00~01	01	Sand Castle 5 V	
17	DOF	00~01	00	Delay Lead Edge	
18	HD	00~01	00	HDTV/Progressive	
19	FLB	00~01	00	Screen Black	
1A	BOF	00~01	00	Auto Cut-OFF OFF	
1B	ADB	00~01	01	Adaptive Black	
1C	YH1	00~01	00	Y High Level	
1D	MD2	00~01	00	Modus 2	
1E	BLS	00~01	00	BLST	
1F	YEX	00~01	01	Y Exclusive Hue	
20	RLC	00~01	00	Rel. to CutOff	
21	TCP	00~01	01	Time Const. Peak	
			Wide Zoom, Zoom, Subtitle, Full, MP ⋮ Normal		
22	SPI	00~1F	0F	Sub Picture	
23	SCO	00~3F	1F	Sub Color	
24	SBT	00~7F	1F	Sub Bright	
25	SHU	00~1F	0F	Sub Hue	TDA9145
26	SHS	00~1F	0F	Sub Hue S&PinP	
27	CV	00~01	00	Forced CVBS	
28	FON	00~01	01	Frame ON	SDA9188-3X
29	DLY	00~07	00	Sel.Delay LL 3 P	
2A	P-V	00~0F	08	V read delay	
2B	PVS	00~07	01	PIP-V offset	
2C	P-H	00~3F	0A	H read delay	
2D	PHS	00~0F	02	PIP-H offset	
2E	CTR	00~0F	09	Contrast	
2F	DVI	00~1F	07	Set Delay VSI	
30	DVP	00~1F	0F	Delay VSP Pulse	
31	BRT	00~0F	05	Frame Brightness	
32	PLL	00~01	00	PLL Time Const.	
33	9V5	00~07	03	Multi PiP V 50 Hz	
34	9V6	00~07	03	Multi PiP V 60 Hz	
35	9H5	00~07	03	Multi PiP H 50 Hz	
36	9H6	00~07	03	Multi PiP H 60 Hz	
			W5 ⋮ W6 ⋮ Z5 ⋮ Z6 ⋮ S5 ⋮ S6 ⋮ No/Fu5 ⋮ No/Fu6 ⋮ MP		
37	DCS	00~3F	1F	DC Shift	CXA1526P
38	HAP	00~3F	1F	H.Amp	
39	HTL	00~3F	1F	H.Tilt	
3A	UYB	00~3F	1F	Upper Y bow	
3B	LYB	00~3F	1F	Lower Y Bow	
3C	UCB	00~3F	1F	Upper Corner Bow	
3D	UTL	00~3F	1F	Upper Tilt	
3E	LCB	00~3F	1F	Lower Corner Bow	
3F	LTL	00~3F	1F	Lower Tilt	

Item number	Adjustment Item	Data range	Standard DATA	Note	Device
			W5 ⋮ W6 ⋮ Z5 ⋮ Z6 ⋮ S5 ⋮ S6 ⋮ N5 ⋮ N6 ⋮ F5 ⋮ F6		
40	107	00~01	00	Set TMS4C1070	IPQ V3, 4
41	P27	00~01	00	PLLMID Port $P2_7$	(F/F)
42	LFR	00~01	01	LFR ON/OFF	
43	HWE	00~0F	0B	HWE1 Line Delay	
44	NR	00~03	01	Noise Reduction	
45	STP	00~01	00	Still Picture	
			W 5 ⋮ W 6 ⋮ Z 5 ⋮ Z 6 ⋮ S 5 ⋮ S 6 ⋮ No/Fu 5 ⋮ No/Fu 6		
46	VWD	00~3F	Invalid ⋮ 1 A ⋮ Invalid	Scroll	
47	Y-V	00~FF	00	Y Value	
48	UVV	00~FF	00	UV Value	
49	TXH	00~FF	05	Text H Position	TPU3040
4A	TXV	00~3F	16	Text V Position	
4B	VSP	00~FF	3B	WST Layer V Stop	(Text)
4C	BSP	00~FF	3D	Blanking Stop	
4D	BST	00~FF	35	Blanking Start	
4E	QSF	00~1F	01	ACQ Soft Slicer	
4F	A7F	00~FF	0A	Address 7FH Data	
50	QDT	00~3F	0D	ACQ Data Slicer	
51	CST	00~FF	00	Clamping Start	
52	CSP	00~FF	50	Clamping Stop	
53	FAW	00~FF	0A	NICAM FAW Thresh	MSP3410
54	CCT	00~FF	0A	NICAM Error Bit	
55	WLO	00~FF	0A	W.G.	(Audio,
56	WHI	00~FF	15	W.G.Stereo cut point	Stereo)
57	WML	00~FF	50	W.G. timer	
58	WMH	00~FF	EA	W.G.Bilin cut point	
59	ACG	00~01	01	AGC Auto/Const.	
5A	CDB	00~7F	50	AGC Gain Const.	
5B	FMP	00~7F	24	FM Mono Prescale	
5C	WGP	00~7F	3C	W.G. Prescale	
5D	NIP	00~7F	7F	NICAM Prescale	
5E	CRM	00~01	00	Carrier Mute	
5F	ACO	00~01	01	Audio Clock Out	
60	OSH	00~3F	06	OSD Position H	CXP85340A
61	ODL	00~FF	10	Power ON Delay	
62	BLU	00~01	01	Blue Back	
63	ROS	00~3F	3F	N/S User Step	
64	MUT	00~01	01	No Sync. Mute	
65	DID	00~01	00	disable Degauss	
66	DWZ	00~01	00	User Last Wide	
67	OP0	00~FF	6C	Option 0	
68	OP1	00~FF	01	Option 1	

Note :
- W5 : Wide Zoom 50Hz
- W6 : Wide Zoom 60Hz
- Z5 : Zoom 50Hz
- Z6 : Zoom 60Hz
- S5 : Subtitle50Hz
- S6 : Subtitle60Hz
- N5 : Normal 50Hz
- N6 : Normal 60Hz
- F5 : Full 50Hz
- F6 : Full 60Hz
- MP : Multi PinP

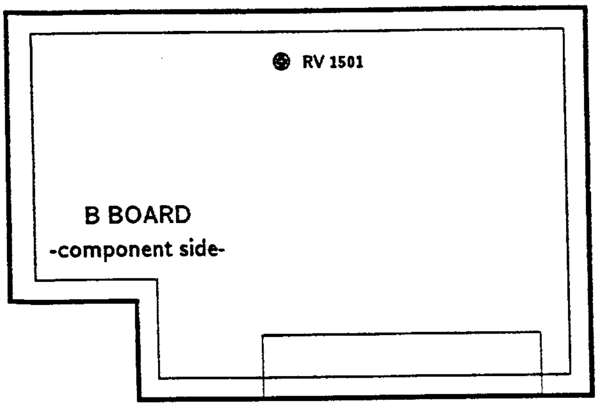
4-3. A2 BOARD ADJUSTMENT


RF-AGC
RF-AGC
IF 101
IF 102
A2 BOARD
-component side-

AGC ADJUSTMENT (IF BLOCK)

1. Receive an off-air signal.
2. Adjust the AGC VR (IF101) so that there is no snow noise and cross-modulation.
3. Set to PIP mode. (only 32 inch)
4. Receive an off-air signal with the sub picture.
5. Adjust the AGC VR (IF102) so that there is no snow noise and cross-modulation.

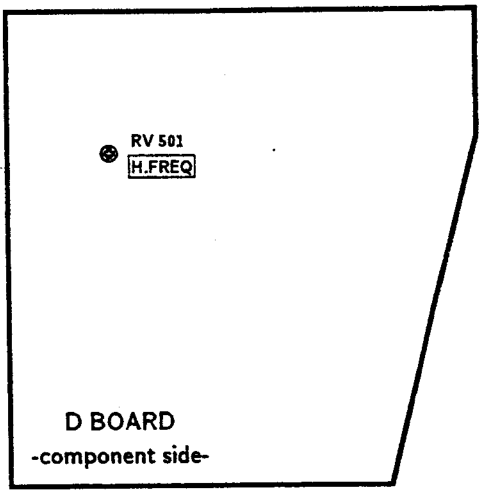
4-4. B BOARD ADJUSTMENT


RV 1501
B BOARD
-component side-

SCP F0 ADJUSTMENT (RV1501)

1. Receive a PAL color-bar signal.
2. Connect an oscilloscope to the pin ⑧ of IC501.
3. Adjust RV1501 for 2.8~2.9 V.

4-5. D BOARD ADJUSTMENT


RV 501
H.FREQ
D BOARD
-component side-

H. FREQ ADJUSTMENT (RV501)

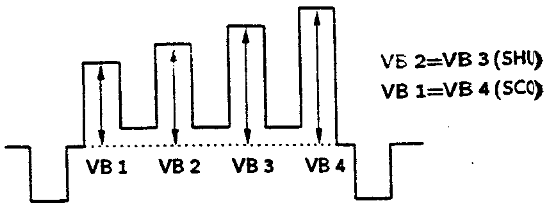
1. Receive a PAL color-bar signal.
2. Short the ground and pin ① of IC502.
3. Connect a frequency counter to the pin ⑫ of IC502.
4. Adjust RV501 for 31.4±0.1 kHz.
5. Disconnect a jumper wire from IC502.

SUB HUE, SUB COLOR ADJUSTMENT (SHU, SCO)

1. Receive a NTSC color-bar to set to FULL mode.
2. Set the conditions as follows.

PICTURE	·········	80%
COLOR	·········	50%
HUE	·········	50%

3. Connect an oscilloscope to the pin⑦ (B OUT) of CN508, D board.
4. Set to Service Mode.
5. Select 25 (SHU) and 23 (SCO) with $\boxed{1}$ and $\boxed{4}$, and adjust $\boxed{3}$ and $\boxed{6}$ to get VB2=VB3 and VB1=VB4.
6. Press $\boxed{\text{MUTING}}$ → $\boxed{0}$ of the commander to writ the data.

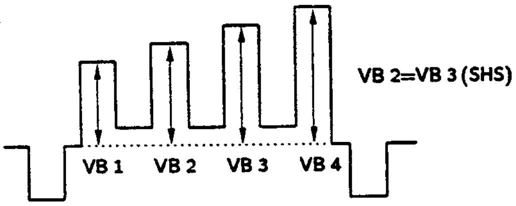

VB 2=VB 3 (SHU)
VB 1=VB 4 (SCO)
VB 1
VB 2
VB 3
VB 4

SUB HUE S ADJUSTMENT (SHS)

1. Receive a S video NTSC color-bar to set to FULL mode.
2. Set the conditions as follows.

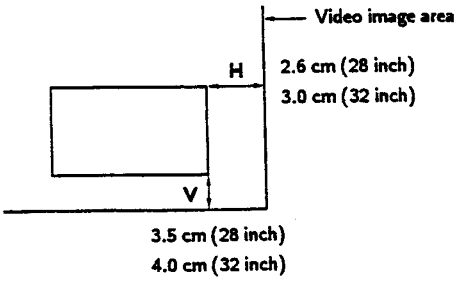
PICTURE	·········	80%
COLOR	·········	50%
HUE	·········	50%

3. Connect an oscilloscope to the pin⑦ (B OUT) of CN 508, D board.
4. Set to Service Mode.
5. Select 26 (SHS) with $\boxed{1}$ and $\boxed{4}$, and adjust $\boxed{3}$ and $\boxed{6}$ to make VB2=VB3.
6. Press $\boxed{\text{MUTING}}$ → $\boxed{0}$ of the commander to write the data.



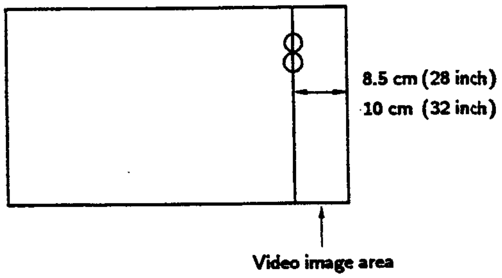
WINDOW PICTURE POSITION ADJUSTMENT (PVS, PHS)

1. Receive a PAL SP color-bar to set to FULL mode.
2. Set to Service Mode.
3. Press $\boxed{\text{MENU}}$ button of the commander for P in P mode. (RIGHT, LOWER position)
4. Select 2A (P-V) or 2B (PVS) and 2C (P-H) or 2D (PHS) with $\boxed{1}$ and $\boxed{4}$.
   Then adjust them respectively, with $\boxed{3}$ and $\boxed{4}$, to 3.5 cm (28 inch) or 4.0 cm (32 inch), and 2.6 cm (28 inch) or 3.0 cm (32 inch).
5. Press $\boxed{\text{MUTING}}$ → $\boxed{0}$ of the commander to write the data.



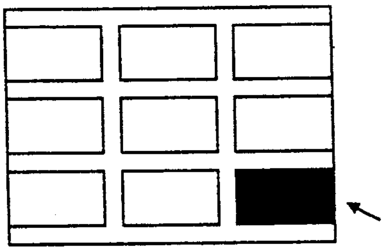
PROGRAM POSITION ADJUSTMENT (OSH)

1. Receive a PAL color-bar to set to FULL mode.
2. Set to Service Mode.
3. Press $\boxed{\text{DISP}}$ button of the commander.
4. Select 60 (OSH) with $\boxed{1}$ and $\boxed{4}$ of the commander, and set the position as shown below with $\boxed{3}$ and $\boxed{6}$.
5. Press $\boxed{\text{MUTING}}$ → $\boxed{0}$ of the commander to write the data.



MULTI PIP ADJUSTMENT (9V5, 9V6, 9H5, 9H6)

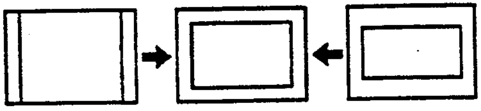
1. Receive a NTSC monoscope to set to FULL mode.
2. Set to Service Mode.
3. Press $\boxed{\text{MENU}}$ button of the commander for STROBE mode. (RIGHT, LOWER position)
4. Select 34 (9V6) and 36 (9H6) with $\boxed{1}$ and $\boxed{4}$, and adjust $\boxed{3}$ and $\boxed{6}$ to set the monosco pattern at the frame center.
5. Press $\boxed{\text{MUTING}}$ → $\boxed{0}$ of the commander to write the data.
6. Receive a PAL monoscope to set to FULL mode.
7. Press $\boxed{\text{MENU}}$ button of the commander for STROBE mode. (RIGHT, LOWER position)
8. Select 33 (9V5) and 35 (9H5) with $\boxed{1}$ and $\boxed{4}$, and adjust $\boxed{3}$ and $\boxed{6}$ to set the monosco pattern at the frame center.
9. Press $\boxed{\text{MUTING}}$ → $\boxed{0}$ of the commander to write the data.



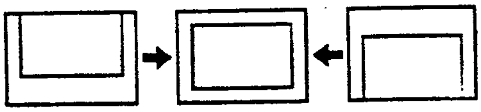
4-6. PICTURE DISTORTION ADJUSTMENT

Item Numbers 23-2D

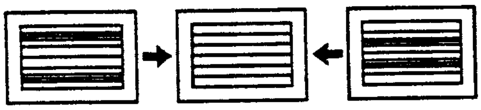
00 VSZ (V SIZE)



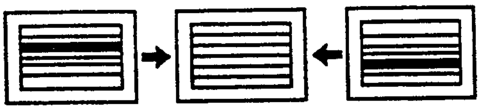
01 VSF (V SHIFT)



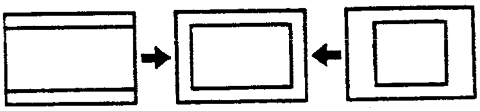
02 SCR (VERTICAL S correction)



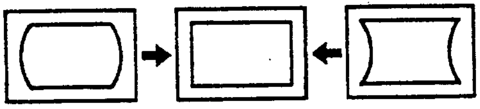
03 VLN (V LINEARITY)



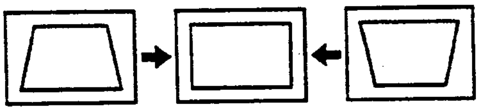
04 HSZ (H SIZE)



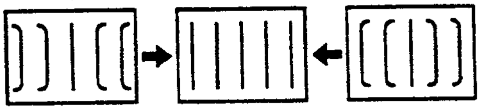
05 PAP (PIN AMP)



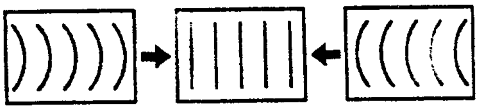
06 TLT (TILT)



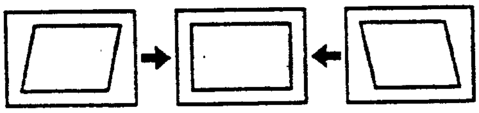
07 UCP (Upper Corner Pin)
08 LCP (Lower Corner Pin)



09 VBW (V-BOW)

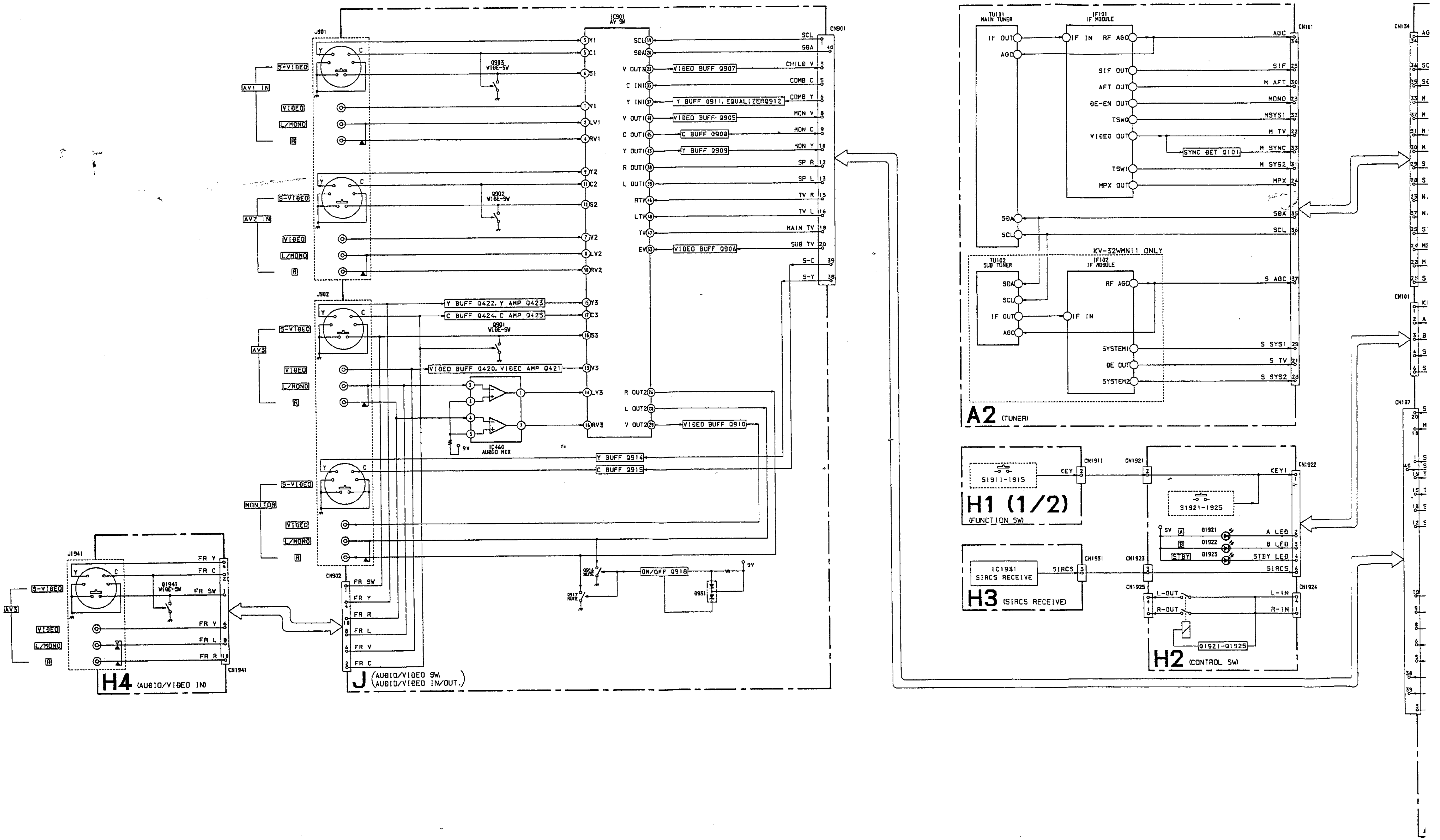


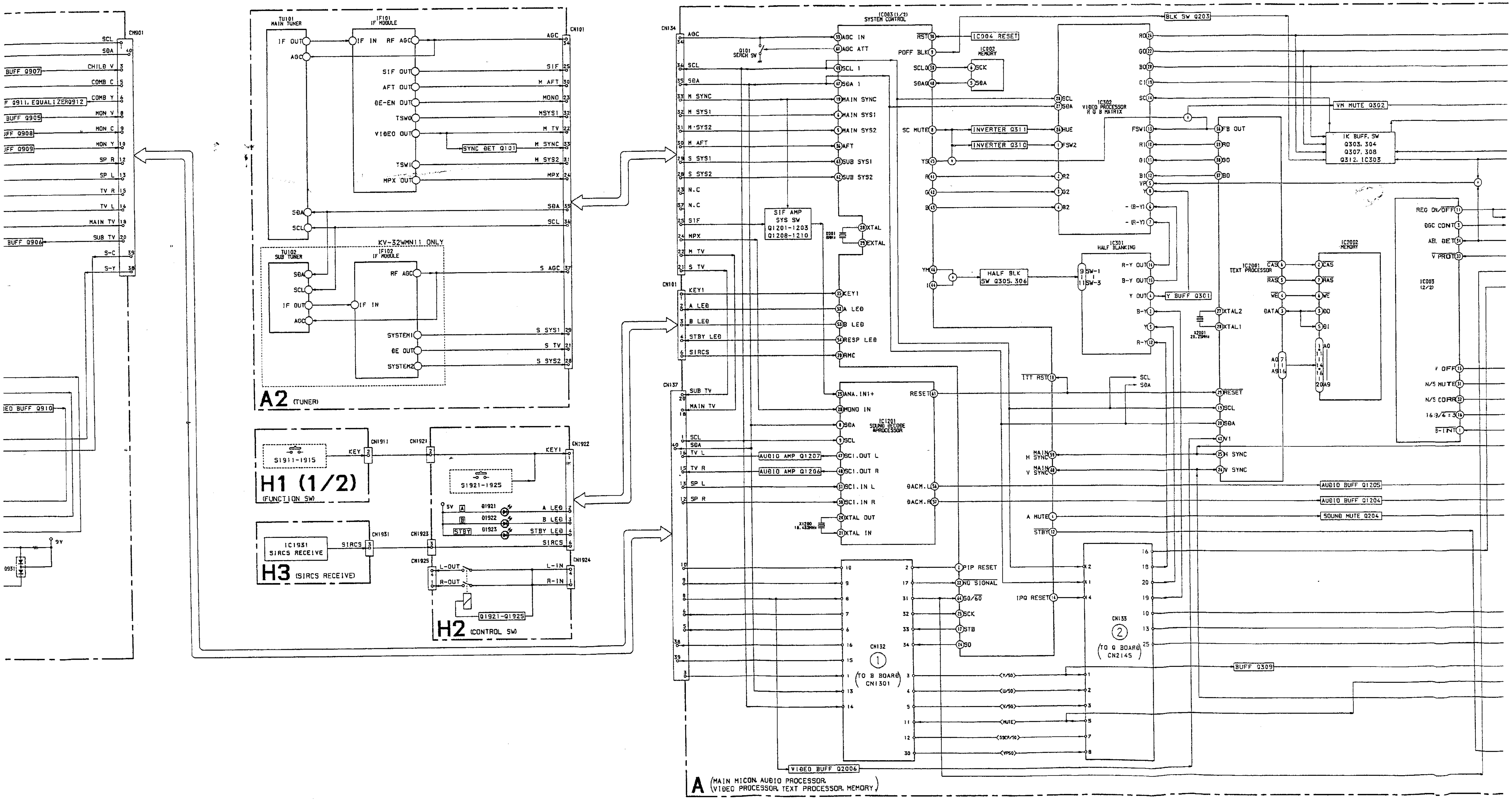
0A VAG (V-ANGLE)

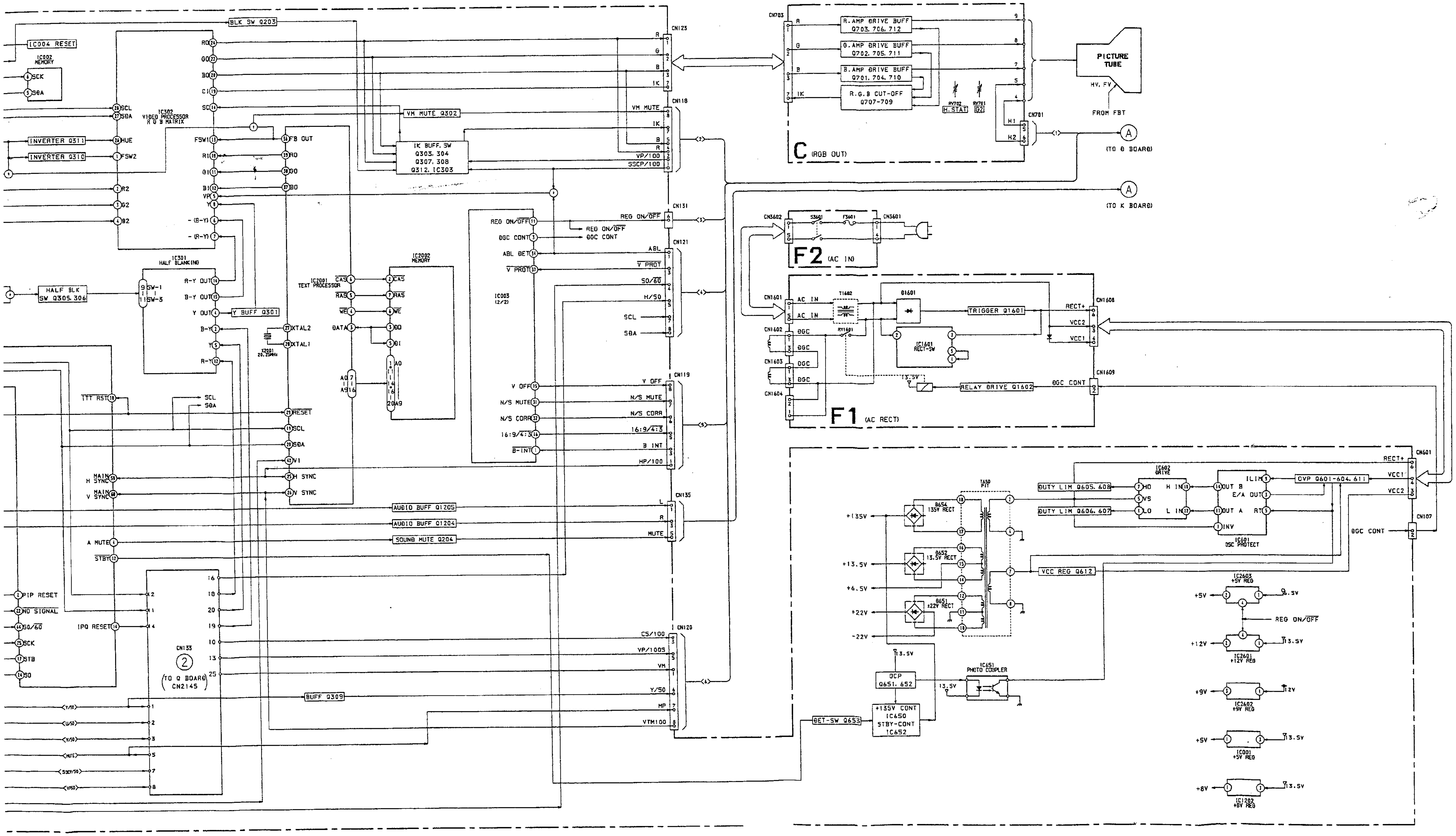


SECTION 5
DIAGRAMS

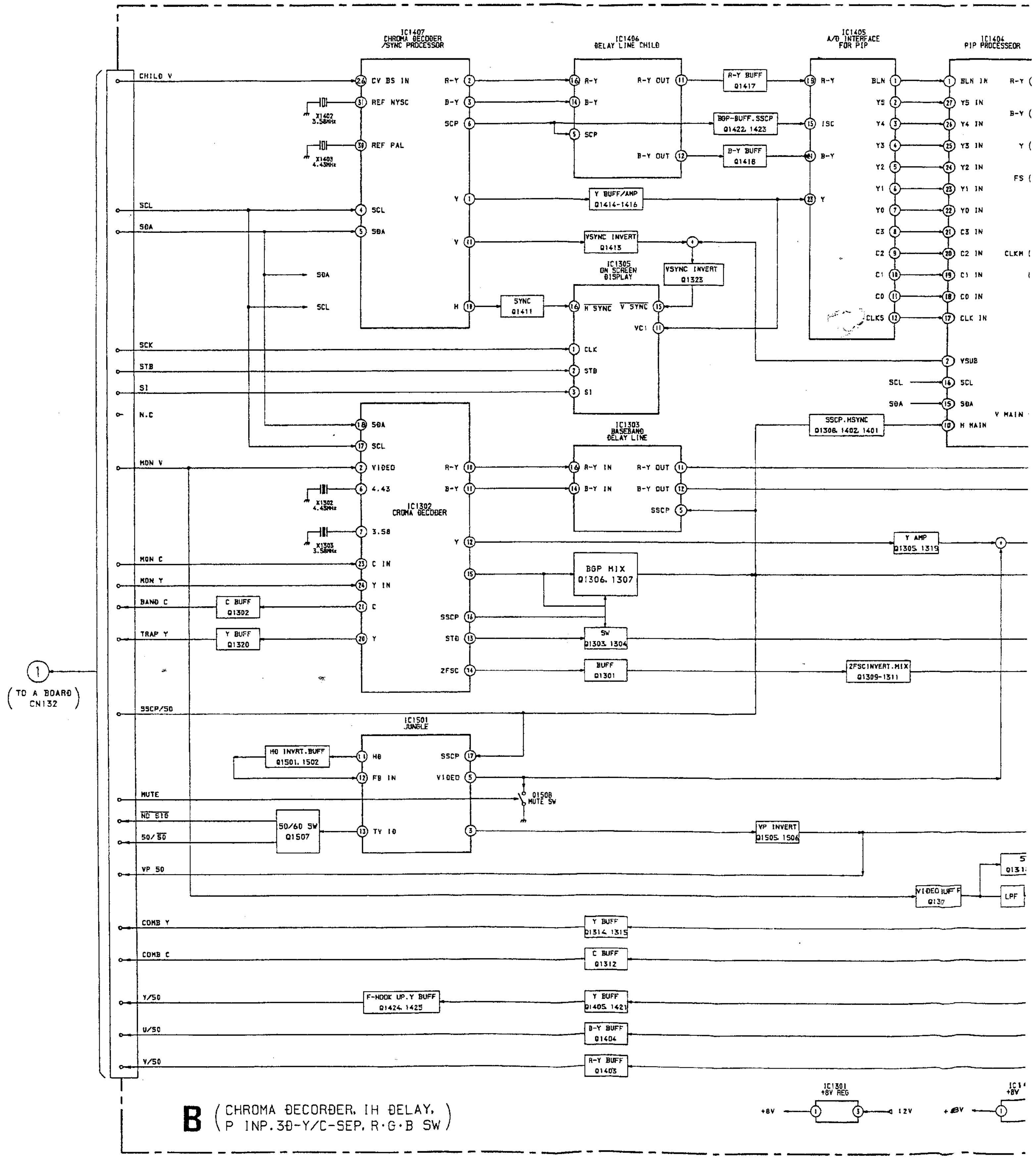
5-1. BLOCK DIAGRAM (1)


J901
IC901
AV SW
CN901
AV1 IN
S-VIDEO
VIDEO
L/MONO
R
Y
C
Q903
VIDE-SW
Y1
C1
S1
V1
LV1
RV1
AV2 IN
Q902
VIDE-SW
Y2
C2
S2
V2
LV2
RV2
SCL
SDA
V OUT3
C IN1
Y IN1
V OUT1
C OUT1
Y OUT1
R OUT1
L OUT1
RTV
LTV
TV
EV
VIDEO BUFF Q907
Y BUFF Q911, EQUALIZERQ912
VIDEO BUFF Q905
C BUFF Q908
Y BUFF Q909
VIDEO BUFF Q906
CHILD V
COMB C
COMB Y
MON V
MON C
MON Y
SP R
SP L
TV R
TV L
MAIN TV
SUB TV
S-C
S-Y
J902
AV3
Y BUFF Q422, Y AMP Q423
C BUFF Q424, C AMP Q425
Q901
VIDE-SW
VIDEO BUFF Q420, VIDEO AMP Q421
Y3
C3
S3
V3
LV3
RV3
IC460
AUDIO MIX
9V
R OUT2
L OUT2
V OUT2
VIDEO BUFF Q910
Y BUFF Q914
C BUFF Q915
MONITOR
Q916
MUTE
Q917
MUTE
ON/OFF Q918
D931
9V
CN902
FR SW
FR Y
FR R
FR L
FR V
FR C
J (AUDIO/VIDEO SW, AUDIO/VIDEO IN/OUT.)
J1941
Q1941
VIDE-SW
FR Y
FR C
FR SW
FR V
FR L
FR R
CN1941
H4 (AUDIO/VIDEO IN)
TU101
MAIN TUNER
IF101
IF MODULE
IF OUT
AGC
IF IN
RF AGC
SIF OUT
AFT OUT
DE-EN OUT
TSW0
VIDEO OUT
TSW1
MPX OUT
SDA
SCL
SYNC DET Q101
CN101
AGC
SIF
M AFT
MONO
MSYS1
M TV
M SYNC
M SYS2
MPX
SDA
SCL
KV-32WMN11 ONLY
TU102
SUB TUNER
IF102
IF MODULE
SYSTEM1
DE OUT
SYSTEM2
S AGC
S SYS1
S TV
S SYS2
A2 (TUNER)
S1911-1915
KEY
CN1911
H1 (1/2)
(FUNCTION SW)
CN1921
CN1922
KEY1
S1921-1925
5V
A
B
STBY
D1921
D1922
D1923
A LED
B LED
STBY LED
SIRCS
IC1931
SIRCS RECEIVE
CN1931
CN1923
H3 (SIRCS RECEIVE)
CN1925
CN1924
L-OUT
R-OUT
L-IN
R-IN
Q1921-Q1925
H2 (CONTROL SW)
CN134
CN101
CN137

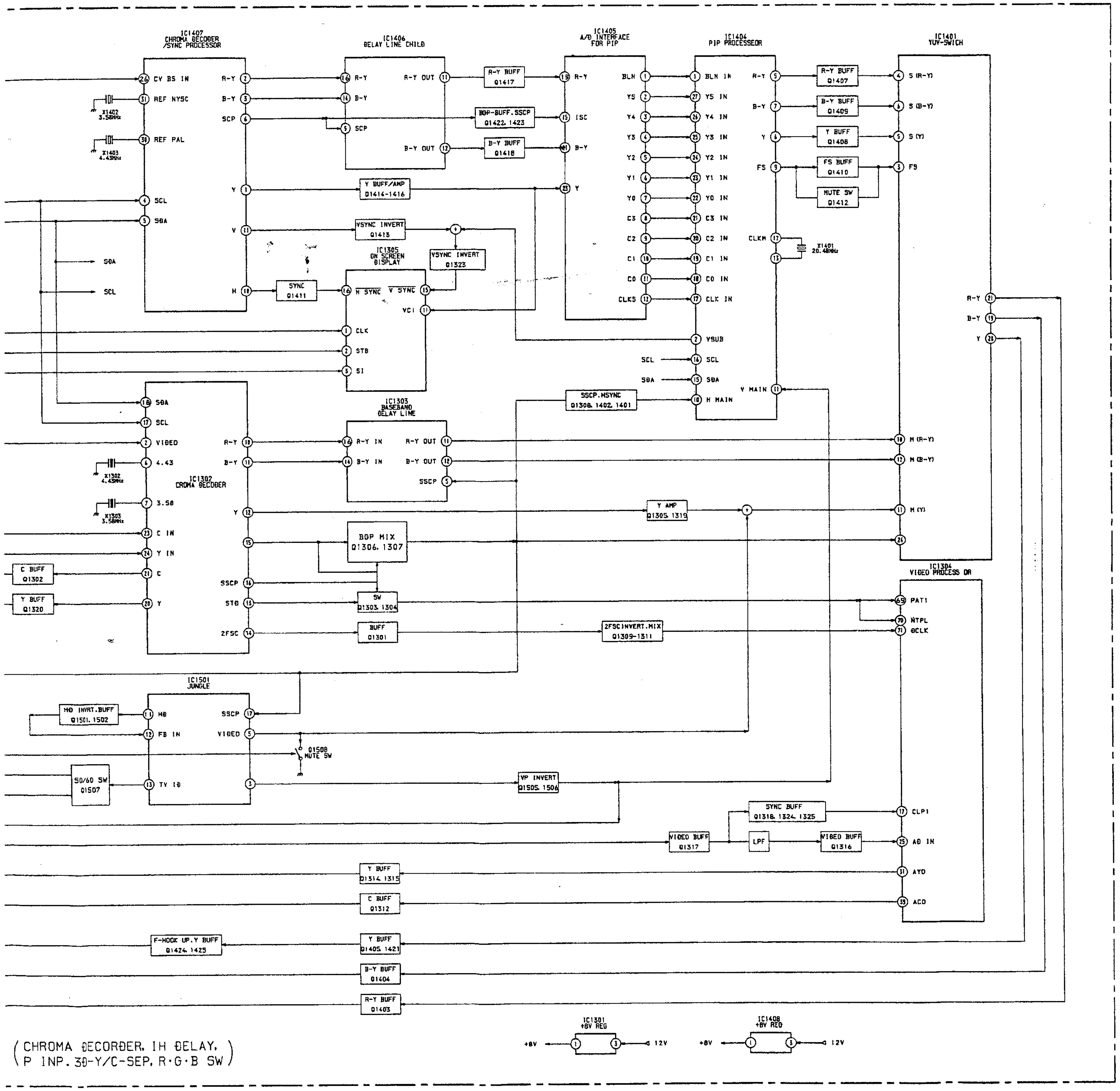

CN901
SCL
SDA
BUFF Q907
CHILD V
COMB C
COMB Y
Q911, EQUALIZER Q912
BUFF Q905
MON V
MON C
MON Y
SP R
SP L
TV R
TV L
MAIN TV
SUB TV
BUFF Q906
S-C
S-Y
VIDEO BUFF Q910
9V
D931
TU101 MAIN TUNER
IF OUT
AGC
IF101 IF MODULE
IF IN
RF AGC
SIF OUT
AFT OUT
DE-EN OUT
TSW0
VIDEO OUT
SYNC DET Q101
TSW1
MPX OUT
CN101
M AFT
MONO
MSYS1
M TV
M SYNC
M SYS2
MPX
SDA
SCL
KV-32WMN11 ONLY
TU102 SUB TUNER
IF102 IF MODULE
S AGC
SYSTEM1
DE OUT
SYSTEM2
S SYS1
S TV
S SYS2
A2 (TUNER)
S1911-1915
KEY
CN1911
CN1921
CN1922
KEY1
H1 (1/2)
(FUNCTION SW)
S1921-1925
5V
A
B
STBY
D1921
D1922
D1923
A LED
B LED
STBY LED
SIRCS
IC1931 SIRCS RECEIVE
CN1931
CN1923
H3 (SIRCS RECEIVE)
CN1925
L-OUT
R-OUT
CN1924
L-IN
R-IN
Q1921-Q1925
H2 (CONTROL SW)
CN134
AGC
SCL
SDA
M SYNC
M SYS1
M SYS2
M AFT
S SYS1
S SYS2
N.C
SIF
MPX
M TV
S TV
CN101
KEY1
A LED
B LED
STBY LED
SIRCS
CN137
SUB TV
MAIN TV
TV L
TV R
SP L
SP R
IC003 (1/2) SYSTEM CONTROL
Q101 SERCH SW
AGC IN
AGC ATT
SCL 1
SDA 1
MAIN SYNC
MAIN SYS1
MAIN SYS2
AFT
SUB SYS1
SUB SYS2
SIF AMP SYS SW Q1201-1203 Q1208-1210
X001 8MHz
XTAL
EXTAL
KEY1
A LED
B LED
RESP LED
RMC
RST
IC004 RESET
POFF BLK
IC002 MEMORY
SCL0
SDA0
SCK
SDA
SC MUTE
INVERTER Q311
INVERTER Q310
YS
R
G
B
YM
I
HALF BLK SW Q305, 306
BLK SW Q203
IC302 VIDEO PROCESSOR R G B MATRIX
SCL
SDA
HUE
FSW2
R2
G2
B2
RO
GO
BO
CI
SC
FSW1
RI
GI
BI
VP
- (B-Y)
- (R-Y)
FB OUT
RD
GD
BD
IC301 HALF BLANKING
SW-1
SW-3
R-Y OUT
B-Y OUT
Y OUT
Y BUFF Q301
B-Y
Y
R-Y
XTAL2
XTAL1
X2001 20.25MHz
VM MUTE Q302
IK BUFF, SW Q303, 304 Q307, 308 Q312, IC303
IC2001 TEXT PROCESSOR
CAS
RAS
WE
DATA
IC2002 MEMORY
A0
A8
A9
A16
20
TTT RST
SCL
SDA
RESET
V1
H SYNC
V SYNC
MAIN H SYNC
MAIN V SYNC
REG ON/OFF
DGC CONT
ABL DET
V PROT
IC003 (2/2)
V OFF
N/S MUTE
N/S CORR
16:9/4:3
B-INT
ANA. IN1+
MONO IN
IC1201 SOUND DECODE &PROCESSOR
SDA
SCL
AUDIO AMP Q1207
AUDIO AMP Q1206
SC1.OUT L
SC1.OUT R
SC1.IN L
SC1.IN R
DACM.L
DACM.R
XTAL OUT
XTAL IN
X1200 18.432MHz
RESET
AUDIO BUFF Q1205
AUDIO BUFF Q1204
SOUND MUTE Q204
A MUTE
STBY
PIP RESET
NO SIGNAL
50/60
SCK
STB
SD
IPQ RESET
CN132
①
(TO B BOARD CN1301)
CN133
②
(TO Q BOARD CN2145)
(Y/50)
(U/50)
(V/50)
(MUTE)
(SSCP/50)
(VP50)
BUFF Q309
VIDEO BUFF Q2006
A (MAIN MICON AUDIO PROCESSOR, VIDEO PROCESSOR, TEXT PROCESSOR, MEMORY)


BLK SW Q203
IC004 RESET
IC002 MEMORY
INVERTER Q311
INVERTER Q310
IC302 VIDEO PROCESSOR R G B MATRIX
VM MUTE Q302
IK BUFF, SW Q303, 304 Q307, 308 Q312, IC303
IC301 HALF BLANKING
HALF BLK SW Q305, 306
Y BUFF Q301
IC2001 TEXT PROCESSOR
IC2002 MEMORY
X2001 20.25MHz
IC003 (2/2)
REG ON/OFF
0GC CONT
ABL DET
V PROT
V OFF
N/S MUTE
N/S CORR
16:9/4:3
B-INT
AUDIO BUFF Q1205
AUDIO BUFF Q1204
SOUND MUTE Q204
CN133
(TO Q BOARD CN2145)
BUFF Q309
CN123
CN118
CN131
CN121
CN119
CN135
CN120
CN703
R.AMP DRIVE BUFF Q703, 706, 712
G.AMP DRIVE BUFF Q702, 705, 711
B.AMP DRIVE BUFF Q701, 704, 710
R.G.B CUT-OFF Q707-709
RV702 H.STAT
RV701 G2
PICTURE TUBE
HV, FV
FROM FBT
CN781
(TO B BOARD)
(TO K BOARD)
C (RGB OUT)
CN3602
S3601
F3601
CN3601
F2 (AC IN)
CN1601
AC IN
T1602
D1601
TRIGGER Q1601
RY1601
IC1601 RECT-SW
RELAY DRIVE Q1602
CN1608
CN1609
CN1602
CN1603
CN1604
F1 (AC RECT)
RECT+
VCC2
VCC1
0GC CONT
T650 FBT
D654 135V RECT
D652 13.5V RECT
D651 ±22V RECT
+135V
+13.5V
+6.5V
+22V
-22V
DUTY LIM Q605, 608
DUTY LIM Q606, 607
IC602 DRIVE
IC601 OSC PROTECT
OVP Q601-604, 611
VCC REG Q612
CN601
CN107
IC2603 +5V REG
REG ON/OFF
IC2601 +12V REG
IC2602 +9V REG
IC001 +5V REG
IC1202 +8V REG
OCP Q651, 652
IC651 PHOTO COUPLER
+135V CONT IC650 STBY-CONT IC652
SET-SW Q653

BLOCK DIAGRAM (2)

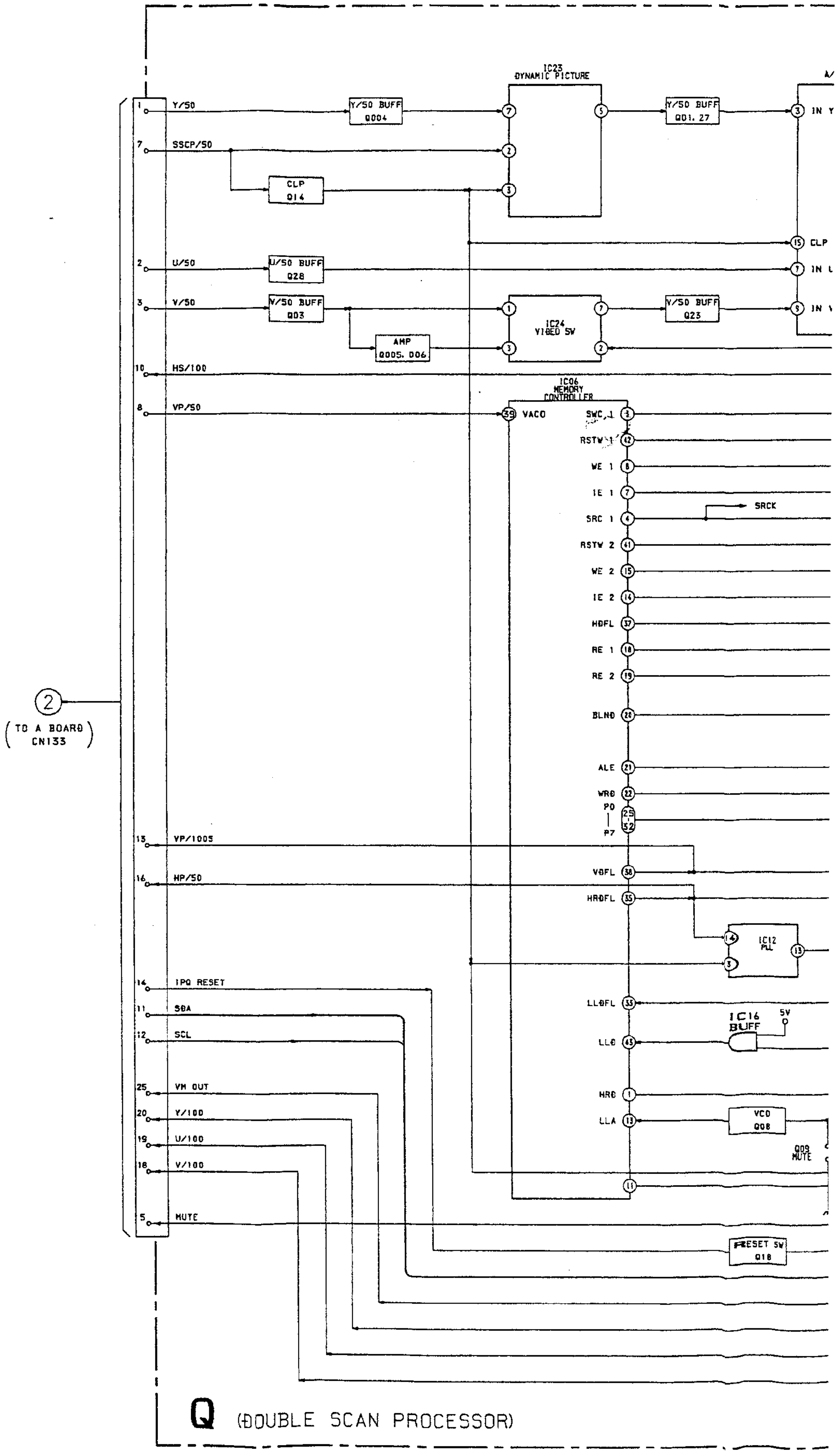

IC1407
CHROMA DECODER /SYNC PROCESSOR
IC1406
DELAY LINE CHILD
IC1405
A/D INTERFACE FOR PIP
IC1404
PIP PROCESSOR
CHILD V
SCL
SDA
SCK
STB
SI
N.C
MON V
MON C
MON Y
BAND C
TRAP Y
SSCP/SO
MUTE
ND STD
50/60
VP 50
COMB Y
COMB C
Y/SO
U/SO
V/SO
X1402 3.58MHz
X1403 4.43MHz
R-Y BUFF Q1417
BGP-BUFF.SSCP Q1422, 1423
B-Y BUFF Q1418
Y BUFF/AMP Q1414-1416
YSYNC INVERT Q1413
IC1305 ON SCREEN DISPLAY
VSYNC INVERT Q1323
SYNC Q1411
SSCP.HSYNC Q1308, 1402, 1401
IC1303 BASEBAND DELAY LINE
IC1302 CROMA DECODER
X1302 4.43MHz
X1303 3.58MHz
C BUFF Q1302
Y BUFF Q1320
BGP MIX Q1306, 1307
SW Q1303, 1304
BUFF Q1301
Y AMP Q1305, 1319
2FSCINVERT.MIX Q1309-1311
IC1501 JUNGLE
HD INVRT.BUFF Q1501, 1502
50/60 SW Q1507
Q1508 MUTE SW
VP INVERT Q1505, 1506
VIDEO BUFF Q137
LPF
Y BUFF Q1314, 1315
C BUFF Q1312
F-HOOK UP.Y BUFF Q1424, 1425
Y BUFF Q1405, 1421
B-Y BUFF Q1404
R-Y BUFF Q1403
IC1301 +8V REG
+8V
12V
V MAIN
H MAIN
YSUB
(1) (TO A BOARD CN132)

B (CHROMA DECORDER, 1H DELAY, P INP.3D-Y/C-SEP, R·G·B SW)


IC1407 CHROMA DECODER /SYNC PROCESSOR
IC1406 DELAY LINE CHILD
IC1405 A/D INTERFACE FOR PIP
IC1404 PIP PROCESSOR
IC1401 YUV-SWICH
IC1305 ON SCREEN DISPLAY
IC1303 BASEBAND DELAY LINE
IC1302 CROMA DECODER
IC1304 VIDEO PROCESS DR
IC1501 JUNGLE
R-Y BUFF Q1417
BDP-BUFF.SSCP Q1422, 1423
B-Y BUFF Q1418
Y BUFF/AMP Q1414-1416
YSYNC INVERT Q1413
YSYNC INVERT Q1323
SYNC Q1411
SSCP.HSYNC Q1308, 1402, 1401
R-Y BUFF Q1407
B-Y BUFF Q1409
Y BUFF Q1408
FS BUFF Q1410
MUTE SW Q1412
X1401 20.48MHz
X1402 3.58MHz
X1403 4.43MHz
X1302 4.43MHz
X1303 3.58MHz
Y AMP Q1305, 1319
BDP MIX Q1306, 1307
SW Q1303, 1304
BUFF Q1301
2FSCINVERT.MIX Q1309-1311
C BUFF Q1302
Y BUFF Q1320
HD INVRT.BUFF Q1501, 1502
Q1508 MUTE SW
50/60 SW Q1507
VP INVERT Q1505, 1506
SYNC BUFF Q1318, 1324, 1325
VIDEO BUFF Q1317
LPF
VIDEO BUFF Q1316
Y BUFF Q1314, 1315
C BUFF Q1312
F-HOOK UP.Y BUFF Q1424, 1425
Y BUFF Q1405, 1421
B-Y BUFF Q1404
R-Y BUFF Q1403
IC1301 +8V REG
IC1408 +8V REG
+8V
12V
SDA
SCL

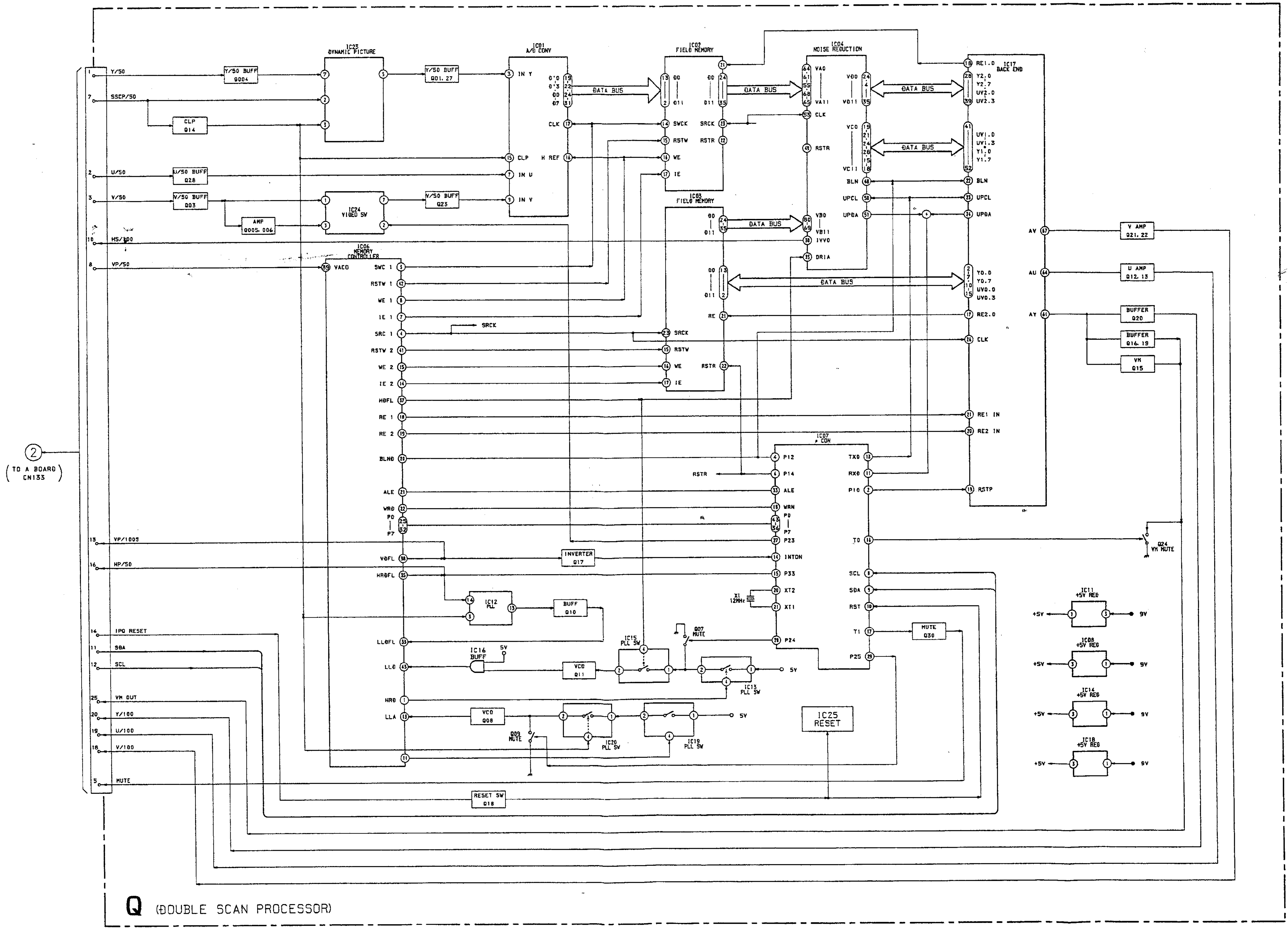
(CHROMA DECORDER, IH DELAY, P INP. 3D-Y/C-SEP. R·G·B SW)

BLOCK DIAGRAM (3)

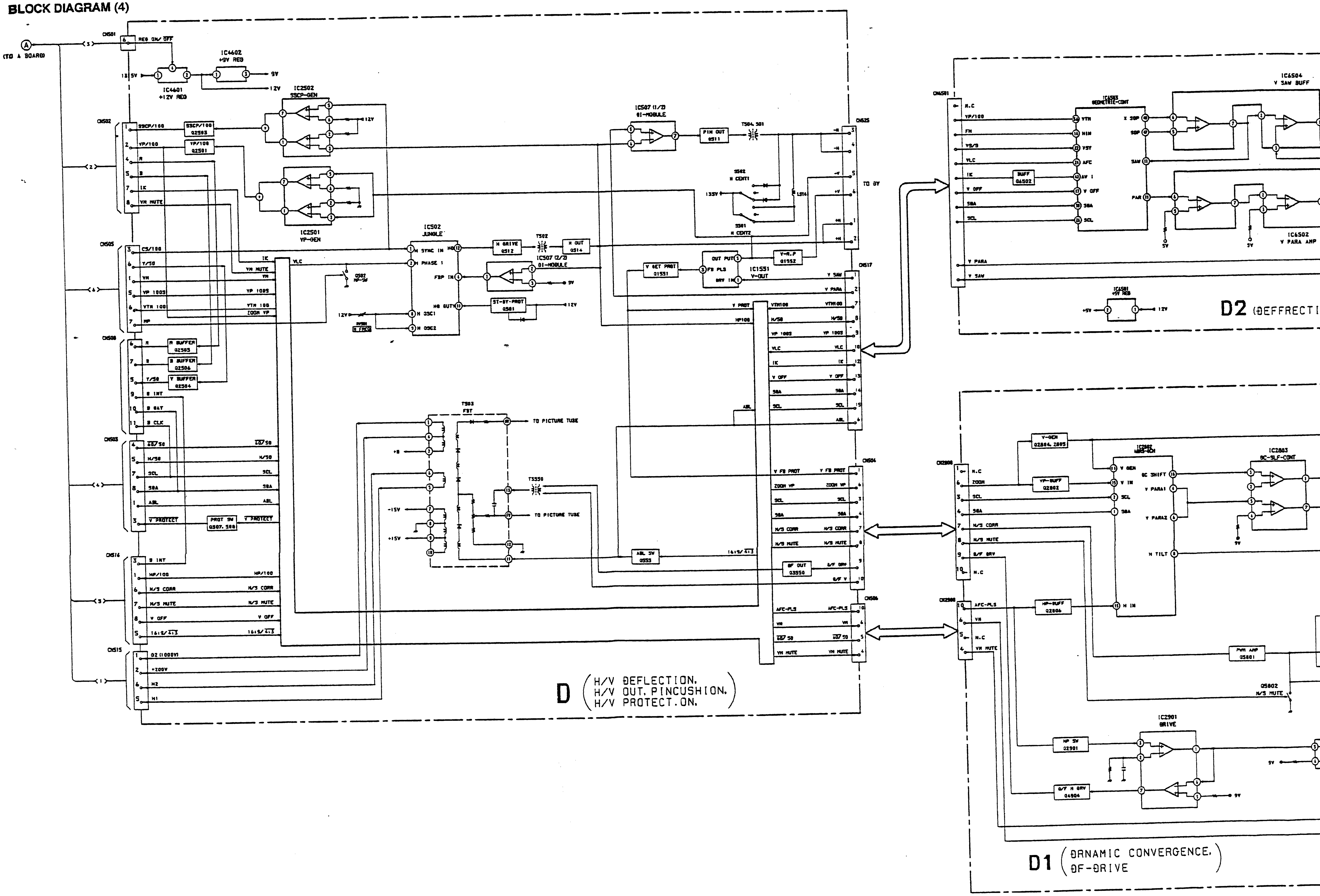

IC23 DYNAMIC PICTURE
Y/50 BUFF Q004
Y/50 BUFF Q01, 27
CLP Q14
U/50 BUFF Q28
V/50 BUFF Q03
AMP Q005, 006
IC24 VIDEO SW
V/50 BUFF Q23
IC06 MEMORY CONTROLLER
IC12 PLL
IC16 BUFF
5V
VCO Q08
Q08 MUTE
RESET SW Q18
SRCK
Y/50
SSCP/50
U/50
V/50
HS/100
VP/50
VP/100S
HP/50
IPQ RESET
SDA
SCL
VM OUT
Y/100
U/100
V/100
MUTE
2
(TO A BOARD CN133)

Q (DOUBLE SCAN PROCESSOR)

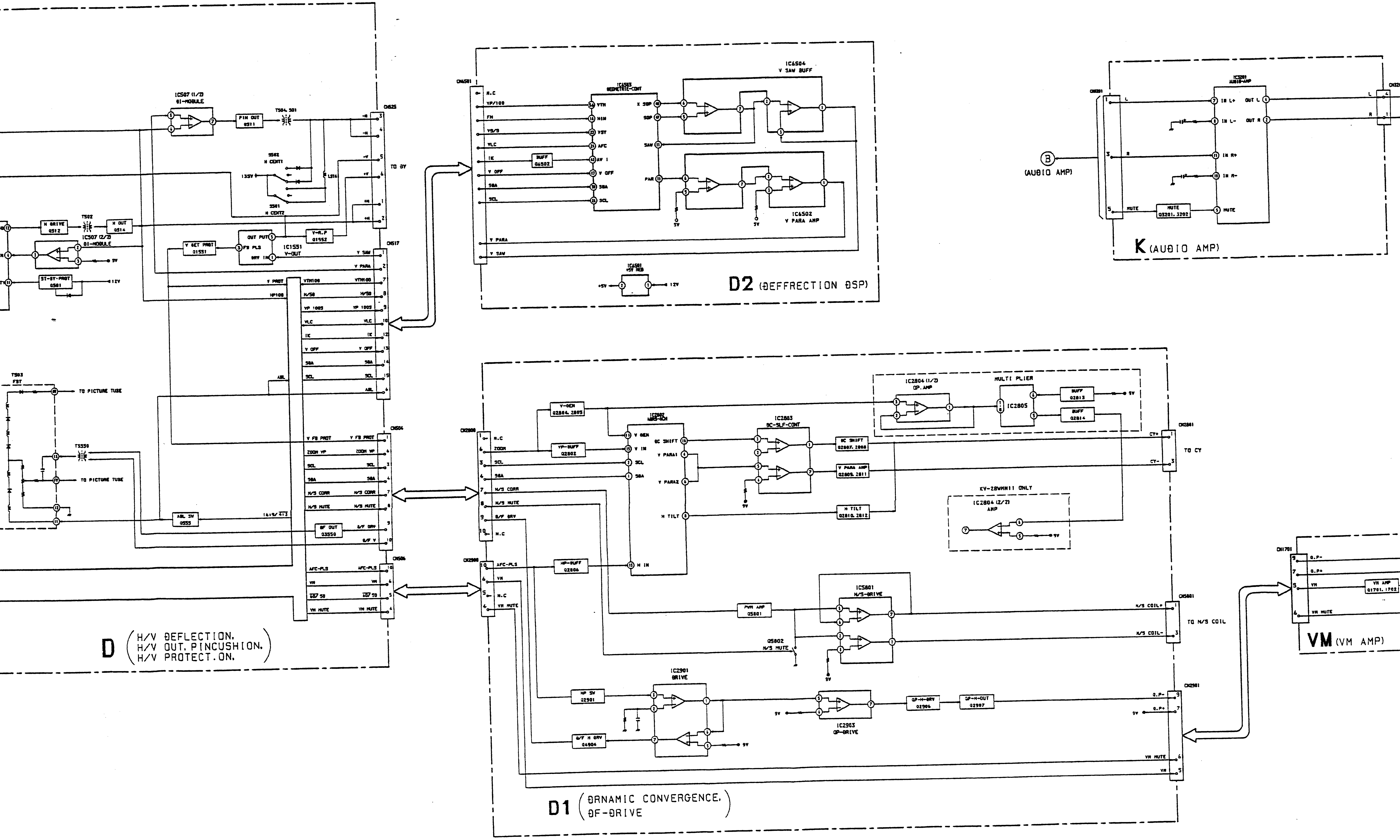
BLOCK DIAGRAM (3)

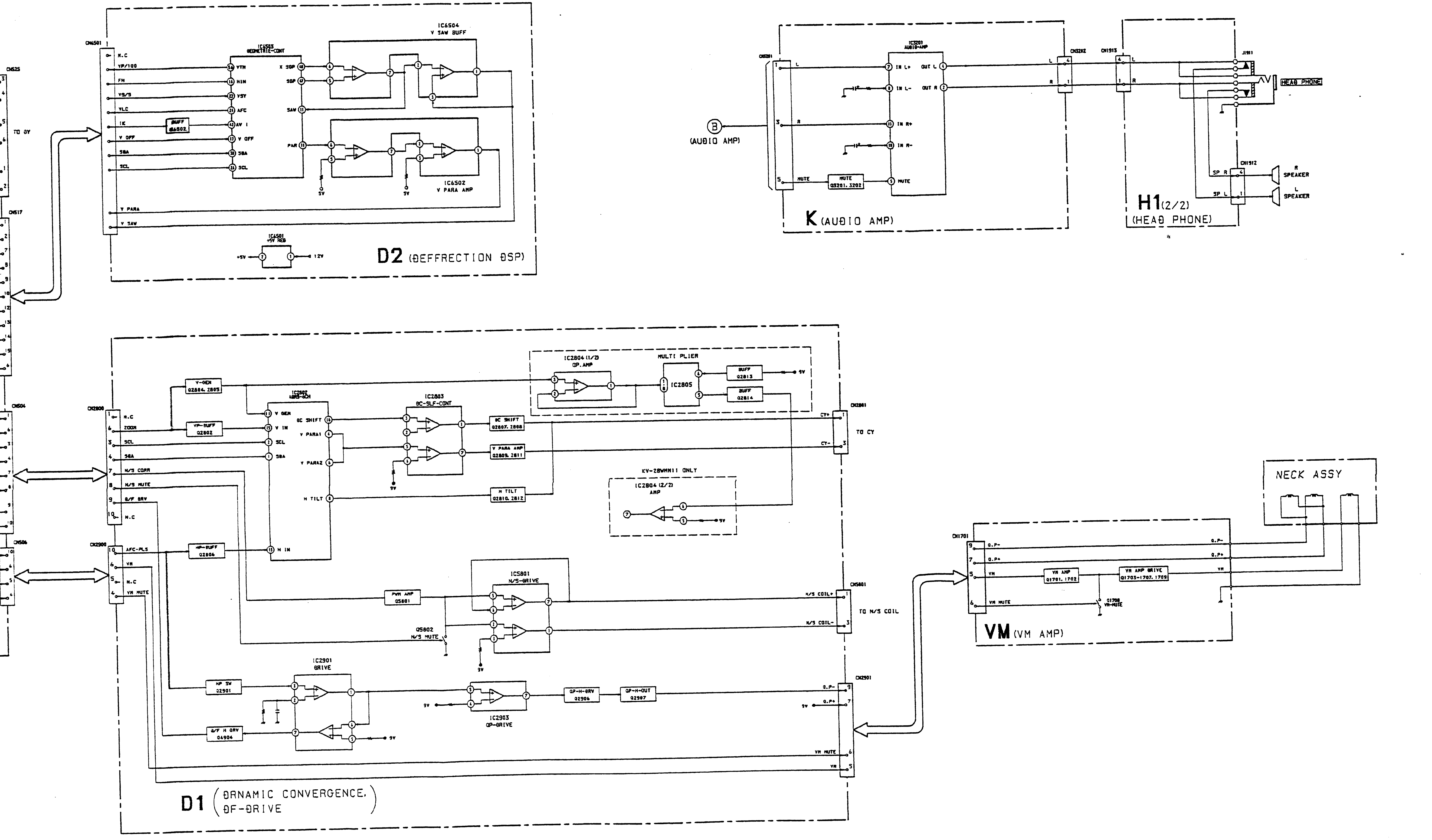

Q (DOUBLE SCAN PROCESSOR)
② (TO A BOARD CN133)
Y/50
SSCP/50
U/50
V/50
HS/100
VP/50
VP/100S
HP/50
IPQ RESET
SDA
SCL
VM OUT
Y/100
U/100
V/100
MUTE
Y/50 BUFF Q004
CLP Q14
U/50 BUFF Q28
V/50 BUFF Q03
AMP Q005, 006
IC23 DYNAMIC PICTURE
IC24 VIDEO SW
Y/50 BUFF Q01, 27
V/50 BUFF Q23
IC01 A/D CONV
IN Y
IN U
IN V
CLP
CLK
H REF
DATA BUS
IC02 FIELD MEMORY
IC03 FIELD MEMORY
SWCK
SRCK
RSTW
RSTR
WE
IE
RE
IC04 NOISE REDUCTION
VA0
VA11
VD0
VD11
VC0
VC11
VB0
VB11
IVVO
DRIA
BLN
UPCL
UPDA
IC17 BACK END
RE1.0
Y2.0
Y2.7
UV2.0
UV2.3
UV1.0
UV1.3
Y1.0
Y1.7
Y0.0
Y0.7
UV0.0
UV0.3
RE2.0
RE1 IN
RE2 IN
RSTP
AY
AU
AV
V AMP Q21, 22
U AMP Q12, 13
BUFFER Q20
BUFFER Q16, 19
VM Q15
Q24 VM MUTE
IC06 MEMORY CONTROLLER
VACO
SWC 1
RSTW 1
WE 1
IE 1
SRC 1
RSTW 2
WE 2
IE 2
HDFL
RE 1
RE 2
BLND
ALE
WRD
P0
P7
VDFL
HRDFL
LLDFL
LLG
HRG
LLA
INVERTER Q17
IC07 µ CON
P12
P14
ALE
WRN
P23
INTON
P33
XT2
XT1
P24
TX0
RX0
P10
T0
SCL
SDA
RST
T1
P25
X1 12MHz
IC12 PLL
BUFF Q10
IC16 BUFF
5V
VCO Q11
IC15 PLL SW
Q07 MUTE
IC13 PLL SW
VCO Q08
Q09 MUTE
IC20 PLL SW
IC19 PLL SW
MUTE Q30
IC25 RESET
RESET SW Q18
IC11 +5V REG
IC08 +5V REG
IC14 +5V REG
IC18 +5V REG
+5V
9V

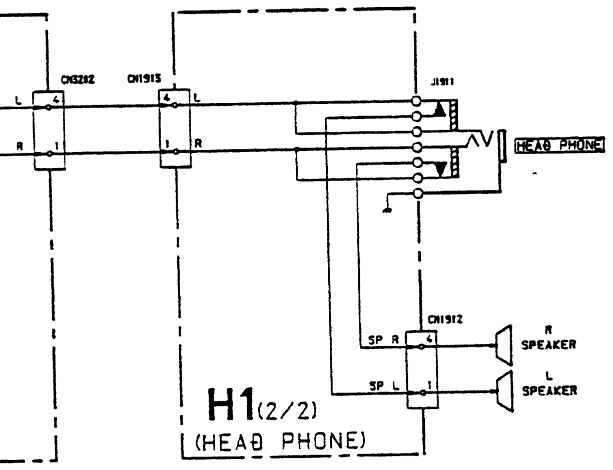
BLOCK DIAGRAM (4)

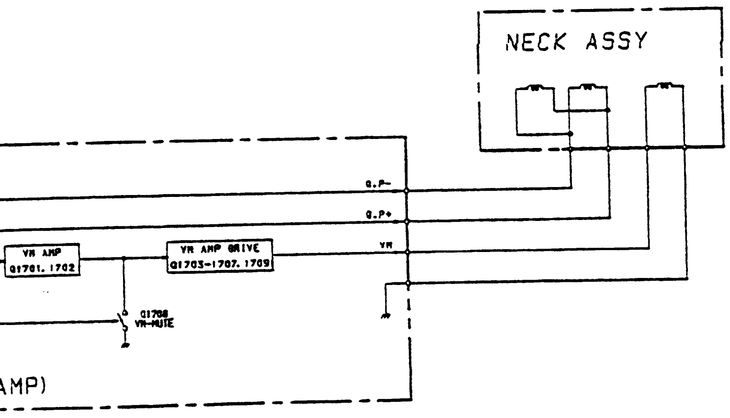


A
(TO A BOARD)
CN501
REG ON/OFF
IC4602
+9V REG
9V
12V
IC4601
+12V REG
IC2502
SSCP-GEN
IC2501
VP-GEN
CN502
SSCP/100
VP/100
R
B
IK
VM MUTE
SSCP/100
Q2503
VP/100
Q2501
CN505
CS/100
Y/50
VM
VP 100S
VTM 100
HP
CN508
R BUFFER
Q2505
B BUFFER
Q2506
Y BUFFER
Q2504
B INT
B GAT
B CLK
CN503
40/50
H/50
SCL
SDA
ABL
V PROTECT
PROT SW
Q507, 508
CN516
HP/100
H/S CORR
H/S MUTE
V OFF
16:9/4:3
CN515
G2 (1000V)
+200V
H2
H1
IC502
JUNGLE
H SYNC IN
H PHASE 1
FBP IN
H OSC1
H OSC2
HD
H OUT
H DRIVE
Q512
T502
H OUT
Q514
IC507 (2/2)
DI-MODULE
ST-BY-PROT
Q501
Q502
HP-SW
RV501
H FREQ
IC507 (1/2)
DI-MODULE
PIN OUT
Q511
T504, 501
S502
H CENT1
S501
H CENT2
135V
LS16
CN525
TO DY
OUT PUT
FB PLS
DRV IN
IC1551
V-OUT
V-R.P
Q1552
V DET PROT
Q1551
CN517
V SAW
V PARA
V PROT
VTM100
HP100
H/50
VP 100S
VLC
IK
V OFF
SDA
SCL
ABL
T503
FBT
TO PICTURE TUBE
+B
-15V
+15V
T3550
TO PICTURE TUBE
ABL SW
Q555
DF OUT
Q3550
V FB PROT
ZOOM VP
CN504
H/S CORR
H/S MUTE
D/F DRV
D/F V
AFC-PLS
VM
40/50
VM MUTE
CN506
D
H/V DEFLECTION,
H/V OUT, PINCUSHION,
H/V PROTECT.ON.
CN6501
N.C
YP/100
FH
Y5/3
VLC
IK
V OFF
SDA
SCL
BUFF
Q6502
IC6503
GEOMETRIC-CONT
VTM
HIN
VST
AFC
AV I
V OFF
SDA
SCL
X SDP
SDP
SAW
PAR
IC6504
V SAW BUFF
IC6502
V PARA AMP
5V
V PARA
V SAW
IC6501
+5V REG
+5V
12V
D2 (DEFFRECTI
CN2800
N.C
ZOOM
SCL
SDA
H/S CORR
H/S MUTE
D/F DRV
N.C
V-GEN
Q2804, 2805
VP-BUFF
Q2802
IC2802
WAVE-GEN
V GEN
V IN
SCL
SDA
DC SHIFT
V PARA1
V PARA2
H TILT
H IN
IC2803
DC-SLF-CONT
9V
CN2900
AFC-PLS
VM
N.C
VM MUTE
HP-BUFF
Q2806
PWR AMP
Q5801
Q5802
H/S MUTE
IC2901
DRIVE
HP SW
Q2901
D/F H DRV
Q4904
5V
D1 (DRNAMIC CONVERGENCE,
DF-DRIVE)

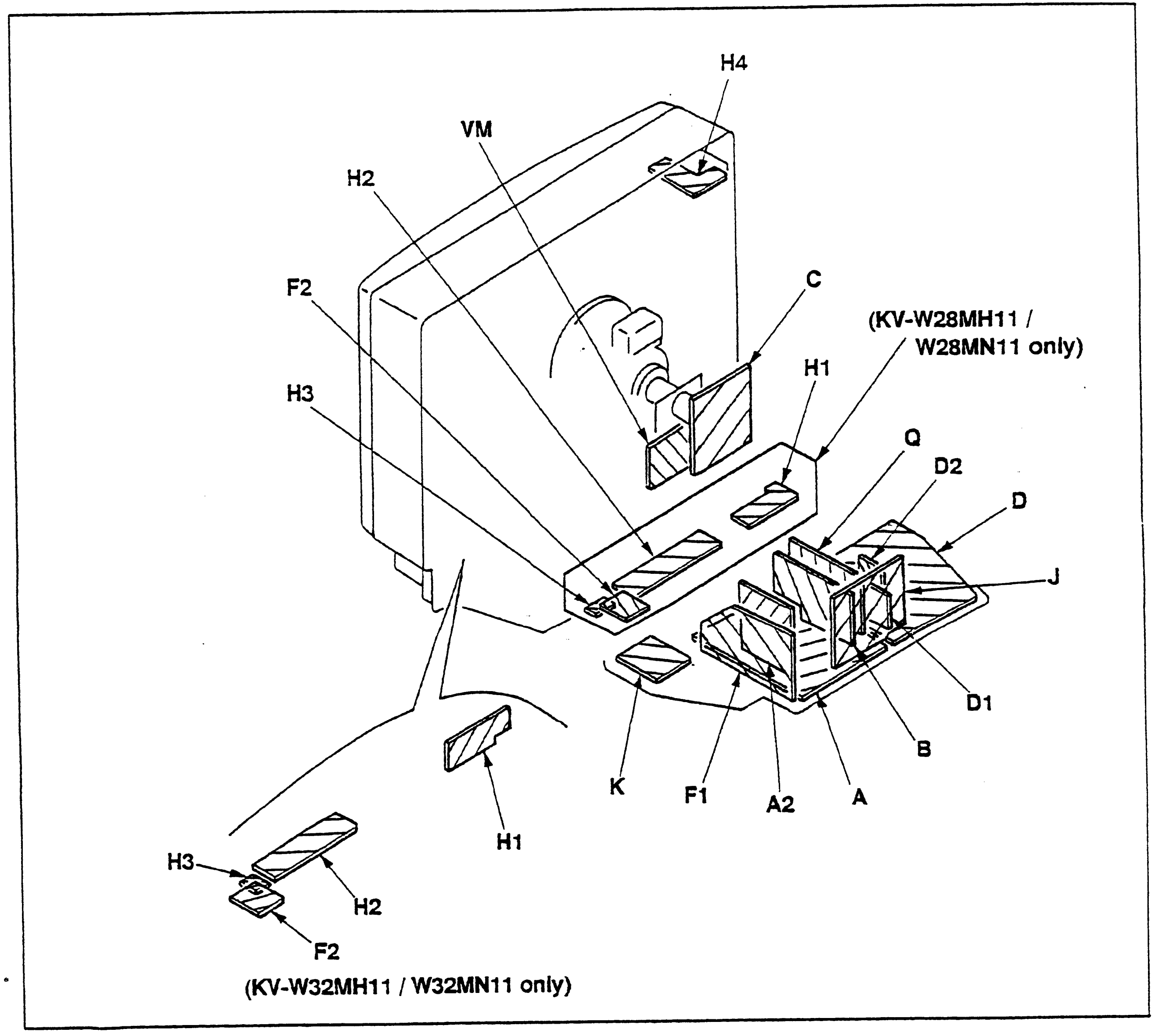

D (H/V DEFLECTION, H/V OUT, PINCUSHION, H/V PROTECT.ON.)
IC507 (1/2) DI-MODULE
PIN OUT Q511
T504, 501
S502 H CENT1
S501 H CENT2
135V
L514
CN525
TO DY
H DRIVE Q512
T502
H OUT Q514
IC507 (2/2) DI-MODULE
9V
ST-BY-PROT Q501
12V
V DET PROT Q1531
OUT PUT
FB PLS
DRV IN
IC1551 V-OUT
V-R.P Q1552
CN517
Y SAW
V PARA
V PROT
HP100
VTM100
H/S0
VP 100S
VLC
IK
V OFF
SDA
SCL
ABL
T503 FBT
TO PICTURE TUBE
T3550
CN504
V FB PROT
ZOOM VP
N/S CORR
N/S MUTE
ABL SW Q555
14:9/4:3
DF OUT Q3550
D/F DRV
D/F V
CN506
AFC-PLS
VM
4:3/50
VM MUTE
D2 (DEFFRECTION DSP)
CN6501
N.C
VP/100
FM
VS/S
IC6503 GEOMETRIE-CONT
VTM
HIN
VSY
AFC
AV I
X SOP
SOP
SAW
PAR
BUFF Q6502
IC6504 V SAW BUFF
IC6502 V PARA AMP
5V
V PARA
V SAW
IC6501 +5V REG
+5V
12V
K (AUDIO AMP)
CN3201
IC3201 AUDIO-AMP
IN L+
IN L-
IN R+
IN R-
OUT L
OUT R
MUTE
MUTE Q3201, 3202
B (AUDIO AMP)
L
R
D1 (DRNAMIC CONVERGENCE, DF-DRIVE)
CN2800
ZOOM
V-GEN Q2804, 2805
VP-BUFF Q2802
IC2802 WAVE-GEN
V GEN
V IN
H IN
DC SHIFT
V PARA1
V PARA2
H TILT
IC2803 DC-SLF-CONT
DC SHIFT Q2807, 2808
V PARA AMP Q2809, 2811
H TILT Q2810, 2812
IC2804 (1/2) OP.AMP
MULTI PLIER
IC2805
BUFF Q2813
BUFF Q2814
9V
CN2841
CY+
CY-
TO CY
KV-28WHM11 ONLY
IC2804 (2/2) AMP
CN2900
AFC-PLS
HP-BUFF Q2806
VM
VM MUTE
PWM AMP Q5801
IC5801 N/S-DRIVE
Q5802 N/S MUTE
CN5801
N/S COIL+
N/S COIL-
TO N/S COIL
IC2901 DRIVE
HP SW Q2901
D/F H DRV Q4904
IC2903 QP-DRIVE
QP-H-DRV Q2906
QP-H-OUT Q2907
CN2901
Q.P-
Q.P+
CN1701
VM AMP Q1701, 1702
VM (VM AMP)


CN525
TO ƏY
CN517
CN504
CN506
CN6501
N.C
YP/100
FM
YS/S
VLC
IK
BUFF
Q6502
V OFF
SƏA
SCL
V PARA
V SAW
IC6503
GEOMETRIE-CONT
VTN
HIN
VSY
AFC
AV I
V OFF
SƏA
SCL
X SOP
SOP
SAW
PAR
IC6504
V SAW BUFF
IC6502
V PARA AMP
5V
5V
IC6501
+5V REG
+5V
12V
D2 (ƏEFFRECTION ƏSP)
CN3201
L
R
MUTE
MUTE
Q3201. 3202
IC3201
AUƏIO-AMP
IN L+
IN L-
IN R+
IN R-
MUTE
OUT L
OUT R
B
(AUƏIO AMP)
CN3202
CN1913
L
R
J1911
HEAƏ PHONE
CN1912
SP R
SP L
R
SPEAKER
L
SPEAKER
K (AUƏIO AMP)
H1 (2/2)
(HEAƏ PHONE)
IC2804 (1/2)
OP.AMP
MULTI PLIER
IC2805
BUFF
Q2813
BUFF
Q2814
9V
V-GEN
Q2804. 2805
CN2800
N.C
ZOOM
SCL
SƏA
N/S CORR
N/S MUTE
Ə/F ƏRV
N.C
YP-BUFF
Q2802
IC2802
ABRS-ƏCH
V GEN
V IN
SCL
SƏA
H IN
ƏC SHIFT
V PARA1
V PARA2
H TILT
IC2803
ƏC-SLF-CONT
9V
ƏC SHIFT
Q2807. 2808
V PARA AMP
Q2809. 2811
H TILT
Q2810. 2812
CN2801
CY+
CY-
TO CY
KV-28WHN11 ONLY
IC2804 (2/2)
AMP
9V
CN2900
AFC-PLS
VM
N.C
VM MUTE
HP-BUFF
Q2806
IC5801
N/S-ƏRIVE
PWM AMP
Q5801
Q5802
N/S MUTE
9V
CN5801
N/S COIL+
N/S COIL-
TO N/S COIL
IC2901
ƏRIVE
HP SW
Q2901
Ə/F H ƏRV
Q4904
9V
IC2903
QP-ƏRIVE
9V
QP-H-ƏRV
Q2906
QP-H-OUT
Q2907
CN2901
Q.P-
Q.P+
9V
VM MUTE
VM
D1 (ƏRNAMIC CONVERGENCE, ƏF-ƏRIVE)
NECK ASSY
CN1701
Q.P-
Q.P+
VM
VM MUTE
VM AMP
Q1701. 1702
VM AMP ƏRIVE
Q1703-1707. 1709
Q1708
VM-MUTE
Q.P-
Q.P+
VM
VM (VM AMP)


CN3202
CN1913
J1911
L
R
4
1
HEAD PHONE
CN1912
SP R
SP L
R SPEAKER
L SPEAKER
H1(2/2)
(HEAD PHONE)


NECK ASSY
Q.P−
Q.P+
VM
VM AMP
Q1701, 1702
VM AMP DRIVE
Q1703−1707, 1709
Q1708
VM-MUTE
AMP)

5-2. CIRCUIT BOARDS LOCATION


H4
VM
H2
F2
C
H3
H1
(KV-W28MH11 / W28MN11 only)
Q
D2
D
J
D1
B
K
F1
A2
A
H1
H3
H2
F2
(KV-W32MH11 / W32MN11 only)

5-3. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

Note :

- All capacitors are in μF unless otherwise noted. pF : μμF 50V or less are not indicated except for electrolytics and tantalums.
- All electrolytics are in 50V unless otherwise specified.
- All resistors are in ohms.
  kΩ = 1000 Ω, MΩ = 1000kΩ
- Indication of resistance, which dose not have one for rating electrical power, is as follows.

Pitch : 5mm
Rating electrical power : ¼W

- ▭ : nonflammable resistor.
- ▭ : fusible resistor.
- Δ : internal component.
- ▭ : panel designation and adjustment for repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- ⊥ : earth-ground.
- ⏚ : earth-chassis.

- Readings are taken with a color-bar signal input.
- Readings are taken with a 10M Ω digital multimeter.
- Voltages are dc with respect to ground unless otherwise noted.
- Voltage variations may be noted due to normal production tolerances.
- All voltages are in V.
  * : Measurement impossibillity.
- V : B + line.
- V : B − line.
  (Actual measured value may be different).
- ⇨ : signal path.(RF)
- Circled numbers are waveform references.
- No mark : with PAL color-bar signal sreceived or common voltage.
  ( ) : with SECAM color-bar signal received.
  〈 〉 : with NTSC 3.58 color-bar signal received.
  [ ] : with NTSC 4.43 color-bar signal received.

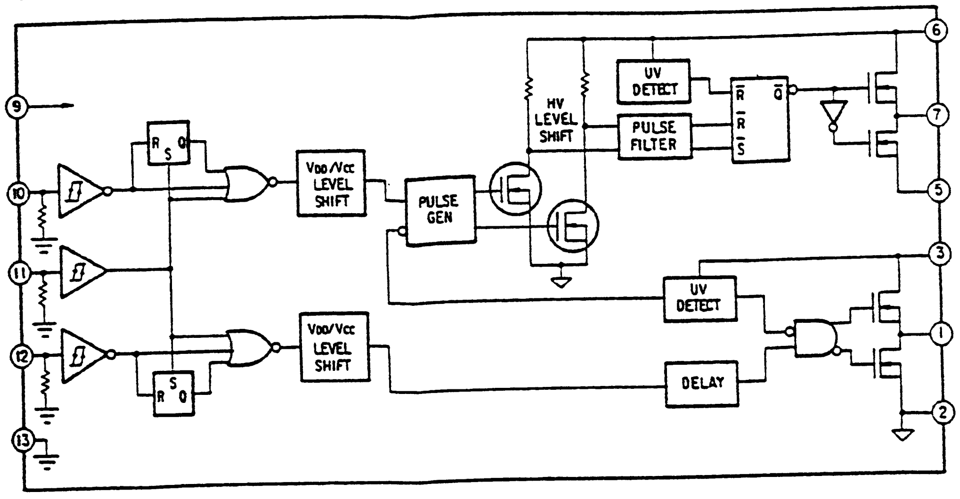
Reference information

RESISTOR	: RN	METAL FILM
	: RC	SOLID
	: FPRD	NONFLAMMABLE CARBON
	: FUSE	NONFLAMMABLE FUSIBLE
	: RW	NONFLAMMABLE WIREWOUND
	: RS	NONFLAMMABLE METAL OXIDE
	: RB	NONFLAMMABLE CEMENT
	: ※	ADJUSTMENT RESISTOR
COIL	: LF-8L	MICRO INDUCTOR
CAPACITOR	: TA	TANTALUM
	: PS	STYROL
	: PP	POLYPROPYLENE
	: PT	MYLAR
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE
	: ALB	BIPOLAR
	: ALT	HIGH TEMPERATURE
	: ALR	HIGH RIPPLE

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

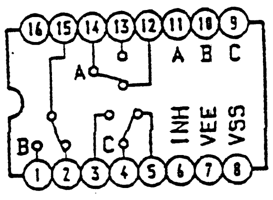
Schematic diagram A (1/2) board ➡

A BOARD IC602 IR2112



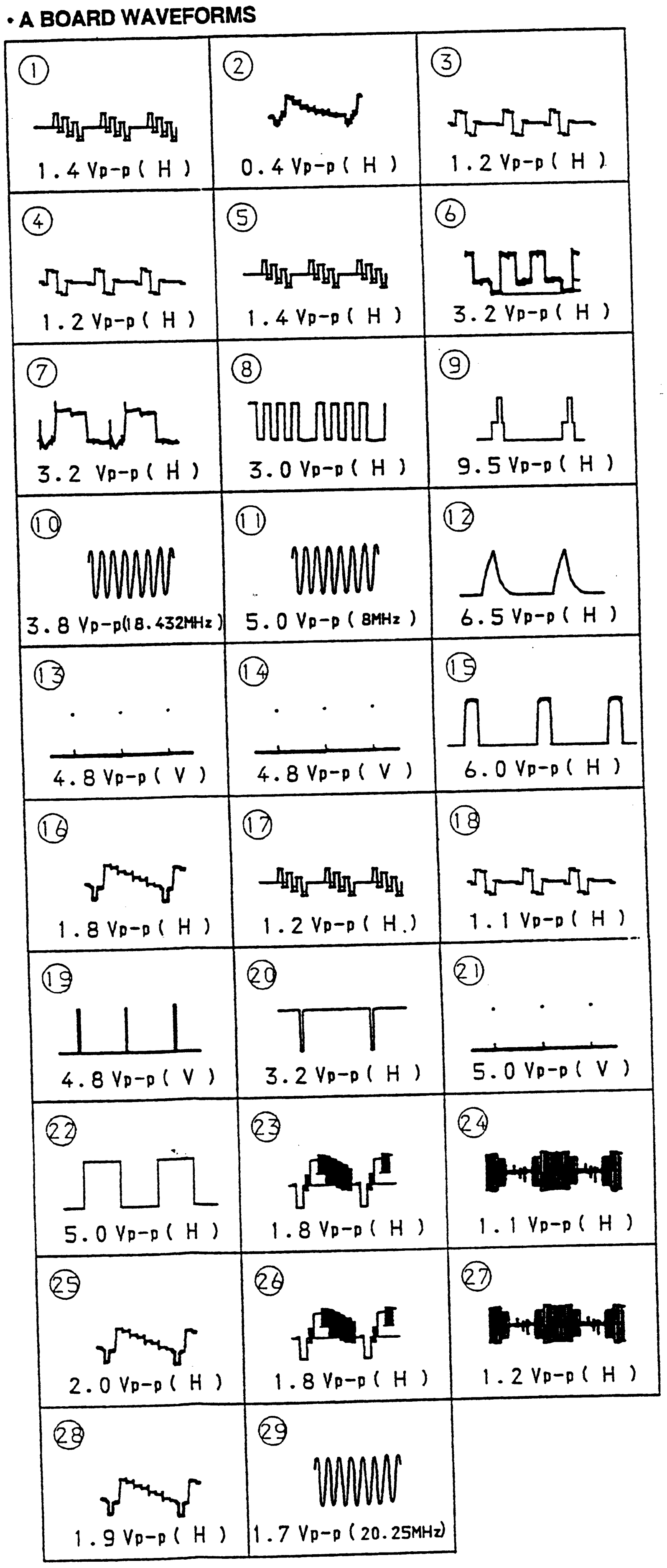
9
10
11
12
13
R S Q
S R Q
Vdd/Vcc LEVEL SHIFT
Vdd/Vcc LEVEL SHIFT
PULSE GEN
HV LEVEL SHIFT
UV DETECT
PULSE FILTER
R Q
R
S
6
7
5
3
UV DETECT
1
DELAY
2

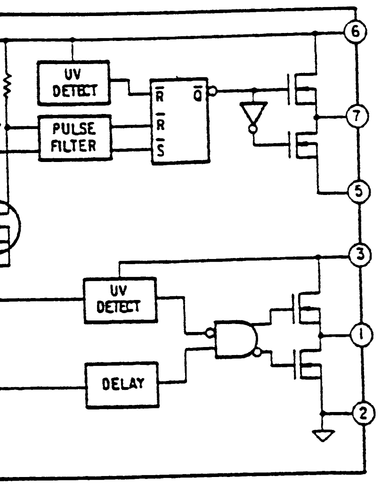
A BOARD IC301 MC14053BF



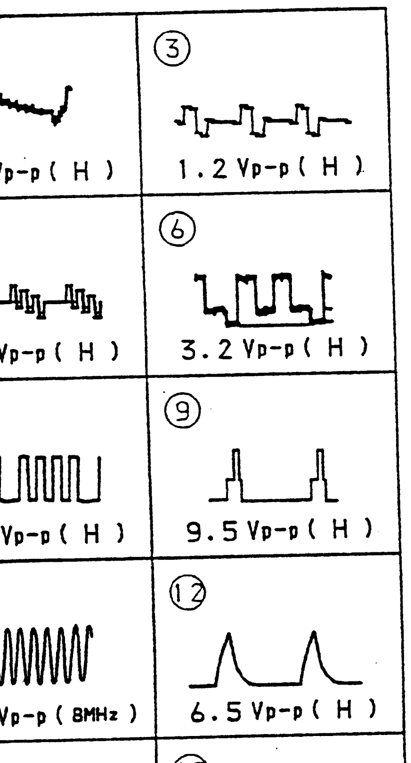
16
15
14
13
12
11
10
9
A B C
A
B
C
INH
VEE
VSS
1
2
3
4
5
6
7
8

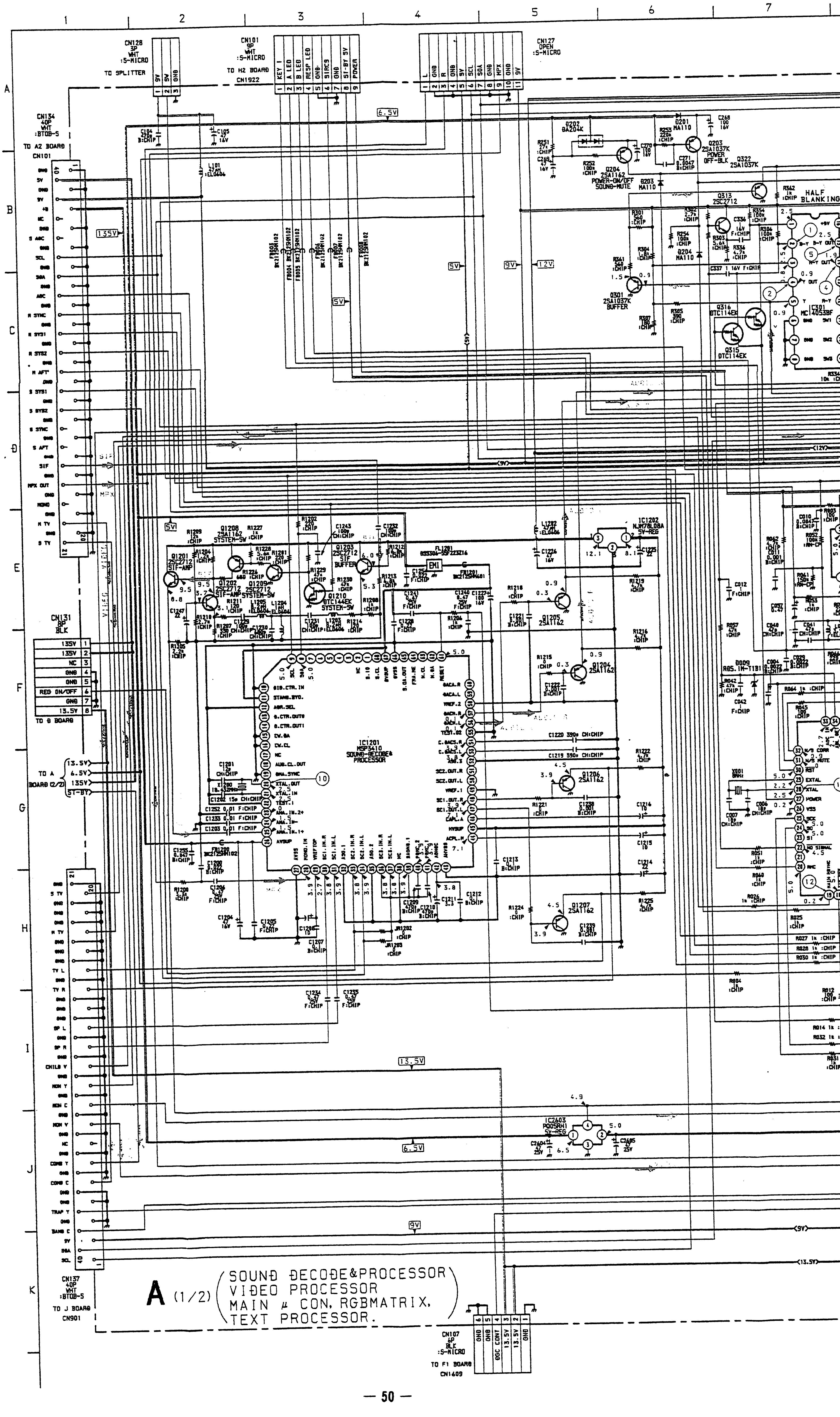
• A BOARD WAVEFORMS





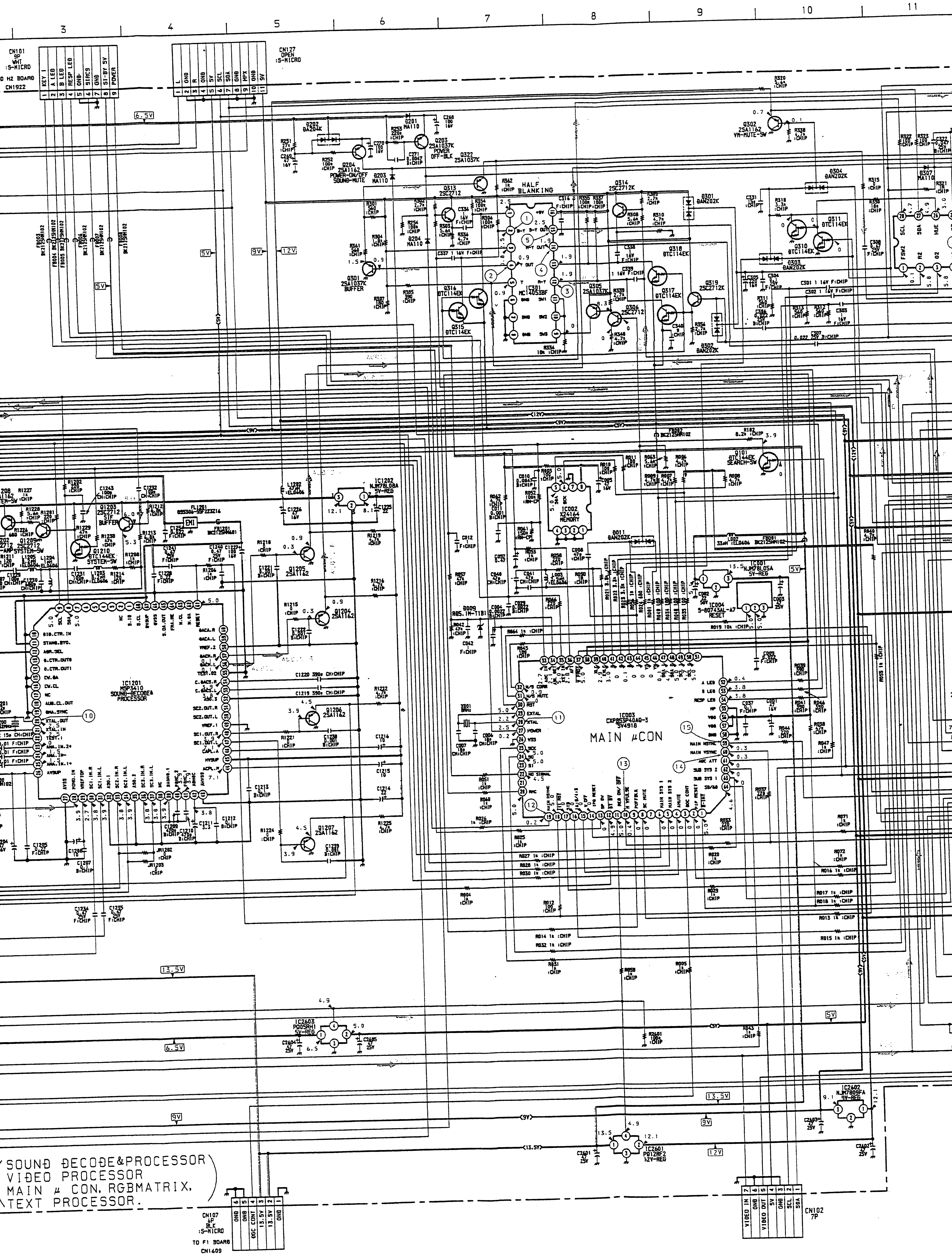
UV DETECT
PULSE FILTER
UV DETECT
DELAY





1
2
3
4
5
6
7
A
B
C
D
E
F
G
H
I
J
K
CN128 3P WHT :S-MICRO
TO SPLITTER
CN101 9P WHT :S-MICRO
TO H2 BOARD CN1922
KEY 1
A LED
B LED
RESP LED
GND
SIRCS
GND
ST-BY 5V
POWER
CN127 OPEN :S-MICRO
L
GND
R
GND
5V
SCL
SDA
GND
MPX
9V
CN134 40P WHT :BTOB-S
TO A2 BOARD CN101
6.5V
135V
5V
9V
12V
Q202 BA204K
D201 MA110
Q203 2SA1037K POWER OFF-BLK
Q322 2SA1037K
Q204 2SA1162 POWER-ON/OFF SOUND-MUTE
D203 MA110
Q313 2SC2712
HALF BLANKING
Q301 2SA1037K BUFFER
Q316 DTC114EK
Q315 DTC114EK
IC301 MC14053BF
FL1201 BSS306-55F223X16
IC1202 NJM78L08A 5V-REG
Q1201 2SC2712 SIF-AMP
Q1208 2SA1162 SYSTEM-SW
Q1202 2SC2712 SIF-AMP
Q1209 2SC2712 SYSTEM-SW
Q1203 2SC2712 SIF BUFFER
Q1210 DTC144EK SYSTEM-SW
Q1205 2SA1162
Q1204 2SA1162
Q1206 2SA1162
Q1207 2SA1162
IC1201 MSP3410 SOUND-DECODE& PROCESSOR
CN131 8P BLK
135V
135V
NC
GND
GND
RED ON/OFF
GND
13.5V
TO G BOARD
TO A BOARD (2/2)
13.5V
6.5V
135V
ST-BY
X1200 18.432MHz
IC2603 PQ05RH1 5V-REG
13.5V
6.5V
9V
CN137 40P WHT :BTOB-S
TO J BOARD CN901
CN107 6P BLK :S-MICRO
TO F1 BOARD CN1609
GND
DGC CONT
13.5V
13.5V
GND
X001 8MHz

A (1/2) SOUND DECODE&PROCESSOR
VIDEO PROCESSOR
MAIN μ CON, RGBMATRIX,
TEXT PROCESSOR.


CN101 9P WHT :S-MICRO
TO H2 BOARD CN1922
KEY 1
A LED
B LED
RESP LED
GND
SIRCS
GND
ST-BY 5V
POWER
CN127 OPEN :S-MICRO
L
GND
R
GND
5V
SCL
SDA
GND
MPX
GND
9V
6.5V
5V
9V
12V
Q202 BA204K
Q201 MA110
Q203 2SA1037K POWER OFF-BLK
Q204 2SA1162 POWER-ON/OFF SOUND-MUTE
Q203 MA110
Q322 2SA1037K
Q313 2SC2712
HALF BLANKING
Q314 2SC2712K
Q301 BAN202K
Q302 2SA1162 VM-MUTE-SW
Q304 BAN202K
Q307 MA110
Q311 DTC114EK
Q310 DTC114EK
Q303 BAN202K
Q301 2SA1037K BUFFER
Q316 DTC114EK
Q315 DTC114EK
IC301 MC14053BF
Q305 2SA1037K
Q306 2SC2712
Q318 DTC114EK
Q317 DTC114EK
Q319 2SC2712K
Q302 BAN202K
Q101 DTC144EK SEARCH-SW
IC1202 NJM78L08A 5V-REG
FL1201
Q1203 2SC2712 SIF BUFFER
Q1209
Q1210 DTC144EK SYSTEM-SW
Q1205 2SA1162
Q1204 2SA1162
Q1206 2SA1162
Q1207 2SA1162
IC1201 MSP3410 SOUND-DECODE& PROCESSOR
IC002 X24164 MEMORY
D011 BAN202K
IC001 NJM78L05A 5V-REG
IC004 S-80743AL-A7 RESET
X001 8MHz
IC003 CXP853P40A0-3 5V4918
MAIN μCON
IC2603 PQ05RH1 5V-REG
IC2601 PQ12RF2 12V-REG
IC2602 NJM7809FA 9V-REG
13.5V
12V
CN107 6P BLK :S-MICRO
TO F1 BOARD CN1609
GND
GND
OOC CONT
13.5V
13.5V
GND
CN102 7P
VIDEO IN
GND
VIDEO OUT
5V
GND
SCL
SDA
3
4
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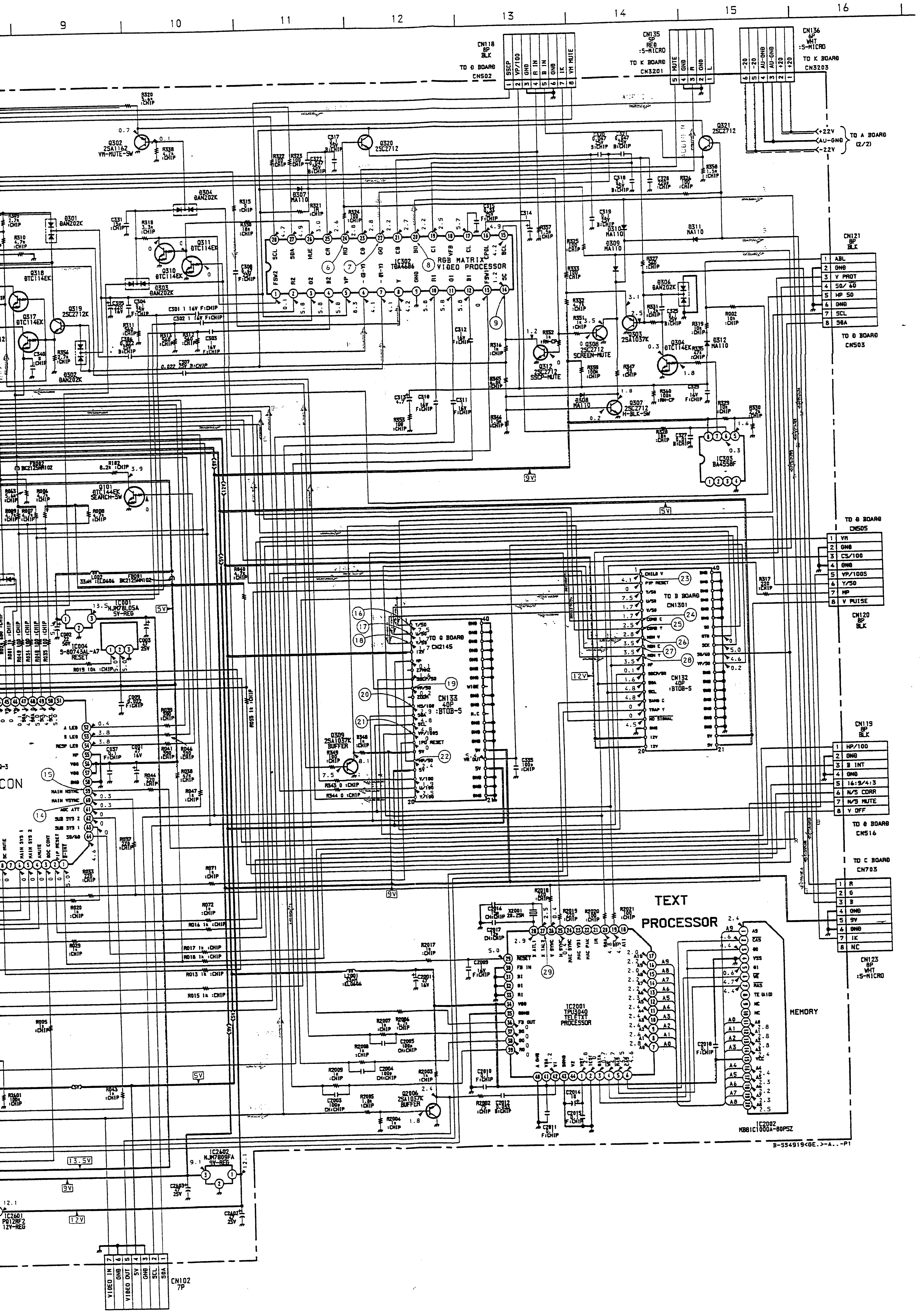
SOUND DECODE&PROCESSOR
VIDEO PROCESSOR
MAIN μ CON, RGBMATRIX,
TEXT PROCESSOR.



9
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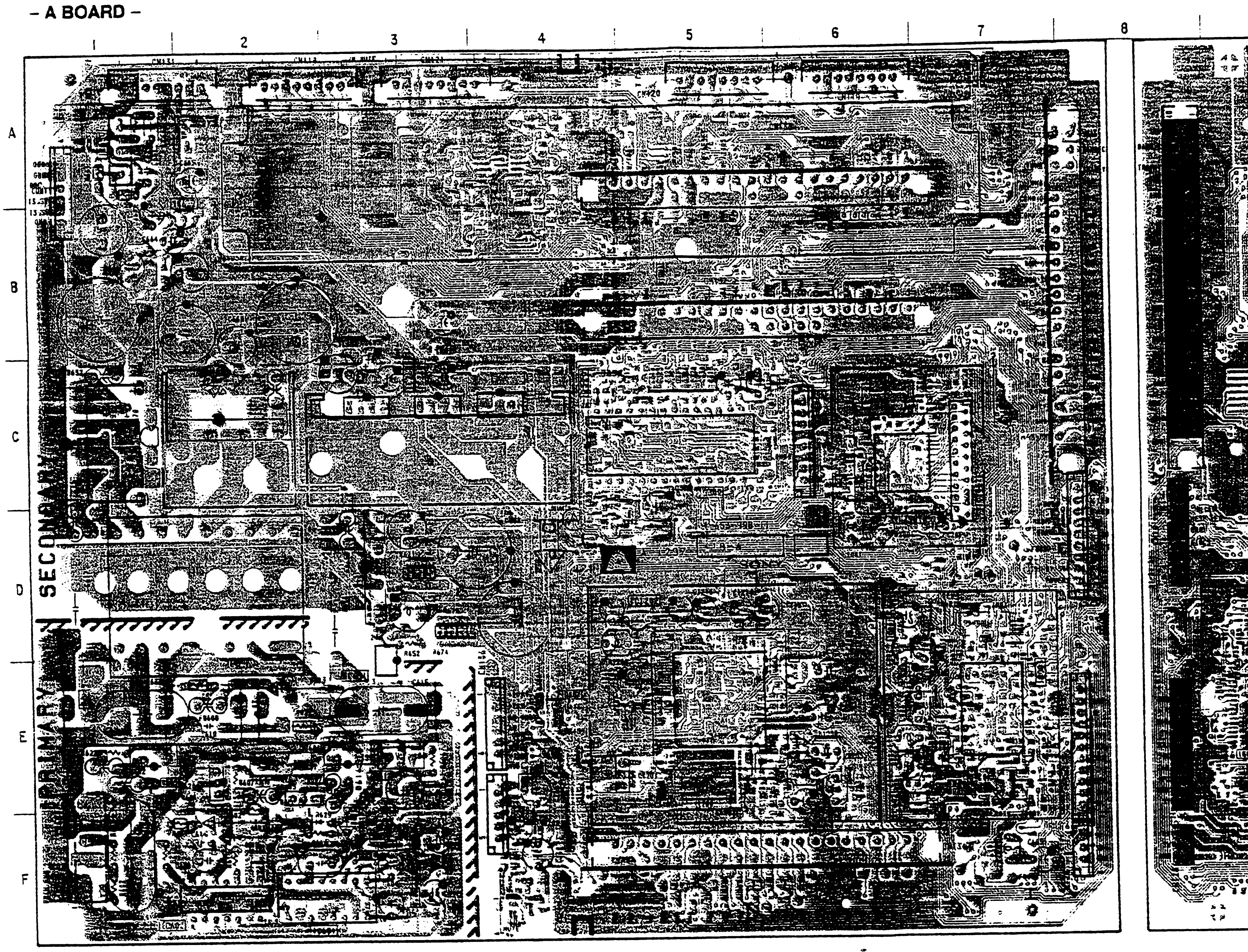
16
CN118 8P BLK
TO B BOARD CN502
SSCP
VP/100
GND
R IN
G IN
B IN
GND
VM MUTE
CN135 5P RED :S-MICRO
TO K BOARD CN3201
MUTE
GND
R
GND
L
CN136 6P WHT :S-MICRO
TO K BOARD CN3203
-20
-20
AU-GND
AU-GND
+20
+20
+22V
AU-GND
-22V
TO A BOARD (2/2)
Q302 2SA1162 VM-MUTE-SW
Q320 2SC2712
Q321 2SC2712
D304 BAN202K
D301 BAN202K
Q311 DTC114EK
Q310 DTC114EK
Q318 DTC114EK
Q317 DTC114EK
Q319 2SC2712K
D303 BAN202K
D302 BAN202K
D307 MA110
IC302 TDA4686 RGB MATRIX VIDEO PROCESSOR
SCL
SDA
HUE
CR
CB
Y
C1
BO
VFB
CL
EPDL
BCL
FSW2
R2
G2
B2
YP
GND
R1
FSW1
SC
D311 MA110
D309 MA110
D310 MA110
D306 BAN202K
CN121 8P BLK
ABL
GND
V PROT
50/60
HP 50
GND
SCL
SDA
TO B BOARD CN503
Q303 2SA1037K
Q308 2SC2712 SCREEN-MUTE
Q312 2SC2712 SSCP-MUTE
Q304 DTC114EK
D312 MA110
D308 MA110
Q307 2SC2712 H-BLK-SW
IC303 BA4558F
9V
5V
Q101 DTC144EK SEARCH-SW
L002 33uH ELO406
IC001 NJM78L05A 5V-REG
IC004 S-80743AL-A7 RESET
TO B BOARD CN505
VM
GND
CS/100
GND
VP/100S
Y/50
HP
V PULSE
CN120 8P BLK
TO B BOARD CN2145
CN133 40P :BTOB-5
Q309 2SA1037K BUFFER
TO B BOARD CN1301
CN132 40P :BTOB-5
CHILD V
PIP RESET
Y/50
U/50
V/50
COMB C
COMB Y
HIGH V
HIGH C
HIGH Y
12V
CN119 8P BLK
HP/100
GND
B INT
GND
16:9/4:3
N/S CORR
N/S MUTE
V OFF
TO B BOARD CN516
TO C BOARD CN703
R
G
B
GND
9V
GND
IK
NC
CN123 8P WHT :S-MICRO
CON
MAIN HSYNC
MAIN VSYNC
AGC ATT
SUB SYS 2
SUB SYS 1
50/60
TEXT PROCESSOR
IC2001 TPU3040 TELETEXT PROCESSOR
X2001 20.25M
L2001 33uH EL0406
Q2006 2SA1037K BUFFER
MEMORY
IC2002 MB81C1000A-80PSZ
A0
A1
A2
A3
A4
A5
A6
A7
A8
A9
A10
RAS
CAS
IC2602 NJM7809FA 9V-REG
IC2601 PQ12RF2 12V-REG
13.5V
9V
12V
CN102 7P
VIDEO IN
GND
VIDEO OUT
5V
GND
SCL
SDA

B-SS4919<GE.>-A..-P1

A SOUND DECODE & PROCESSOR,
VIDEO PROCESSOR, MAIN µCON,
RGB MATRIX, TEXT PROCESSOR,
POWER SUPPLY, OVP

– A BOARD –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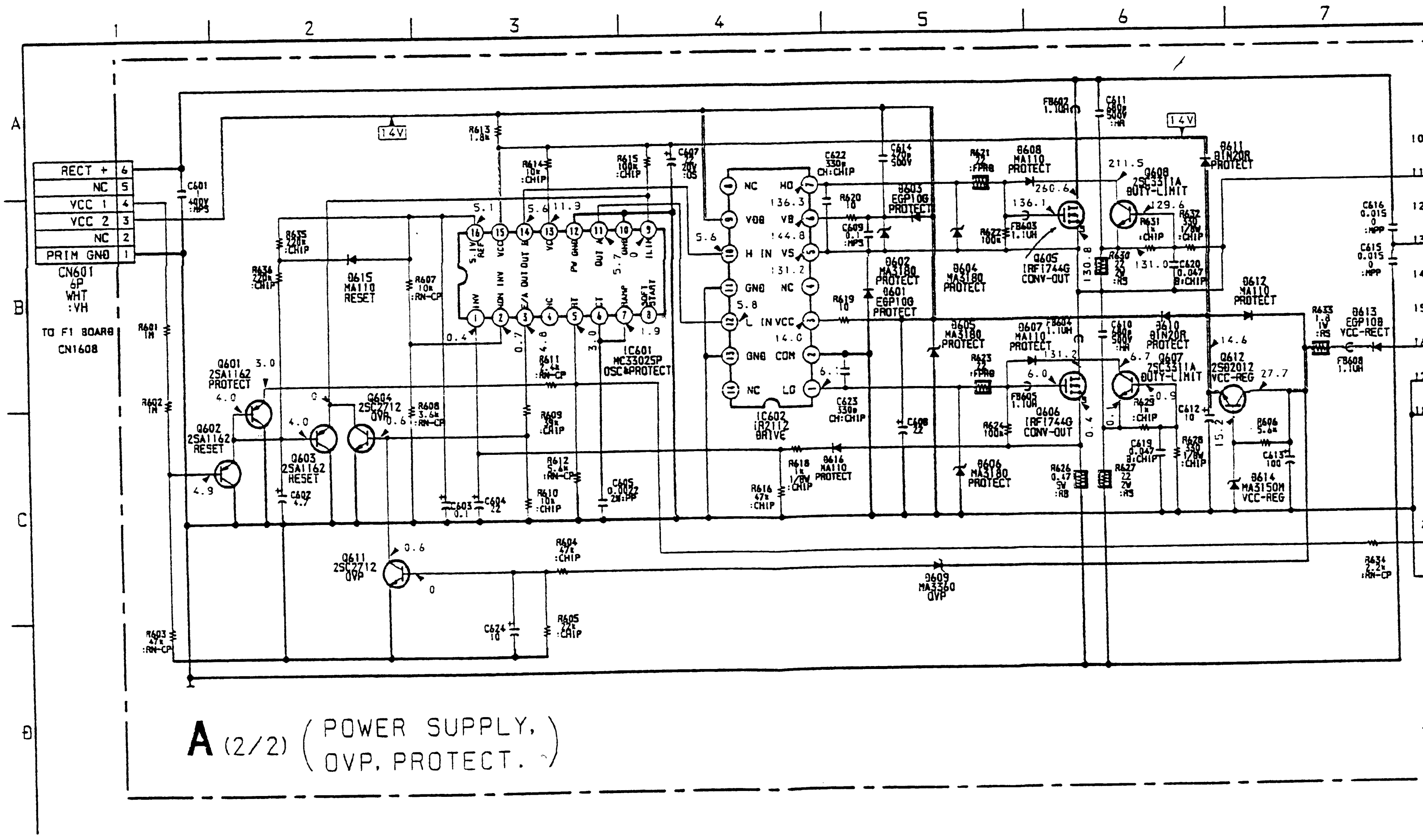
SECONDARY
PRIMARY


1
2
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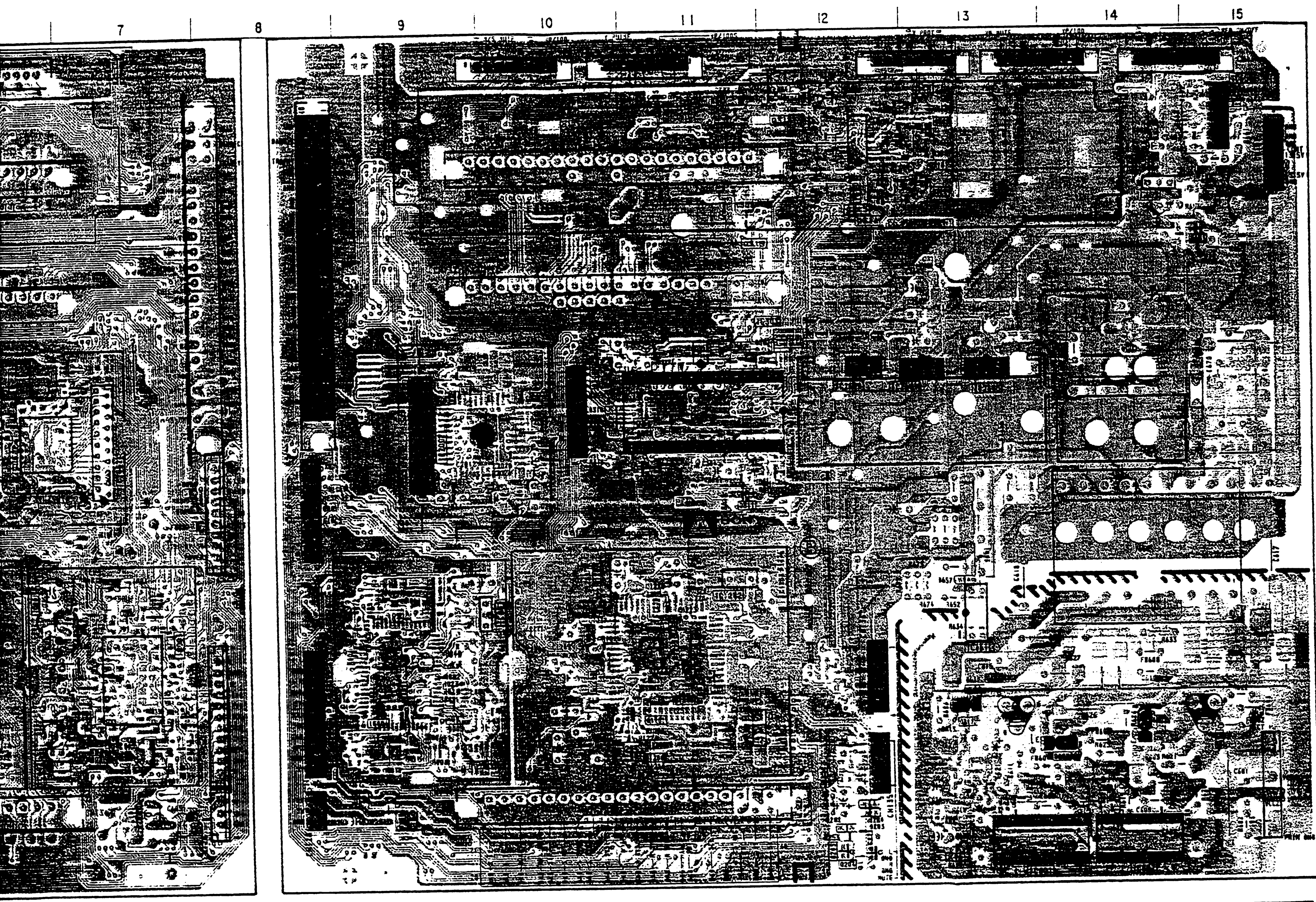
6
7
A
B
C
D
RECT + 6
NC 5
VCC 1 4
VCC 2 3
NC 2
PRIM GND 1
CN601 6P WHT :VH
TO F1 BOARD CN1608
14V
Q601 2SA1162 PROTECT
Q602 2SA1162 RESET
Q603 2SA1162 RESET
Q604 2SC2712 OVP
Q611 2SC2712 OVP
D615 MA110 RESET
IC601 MC33025P OSC&PROTECT
IC602 IR2112 DRIVE
D603 EGP10G PROTECT
D602 MA3180 PROTECT
D601 EGP10G PROTECT
D604 MA3180 PROTECT
D605 MA3180 PROTECT
D606 MA3180 PROTECT
D607 MA110 PROTECT
D608 MA110 PROTECT
D609 MA3360 OVP
D610 8IN20R PROTECT
D611 8IN20R PROTECT
D612 MA110 PROTECT
D613 EGP10B VCC-RECT
D614 MA3150M VCC-REG
Q605 IRF744G CONV-OUT
Q606 IRF744G CONV-OUT
Q607 2SC3311A BOTY-LIMIT
Q608 2SC3311A BOTY-LIMIT
Q612 2SD2012 VCC-REG

A (2/2) (POWER SUPPLY, OVP, PROTECT.)

Note :

- - - - : Pattern from the side which enables seeing.
- ▨ : Pattern of the rear side.


7
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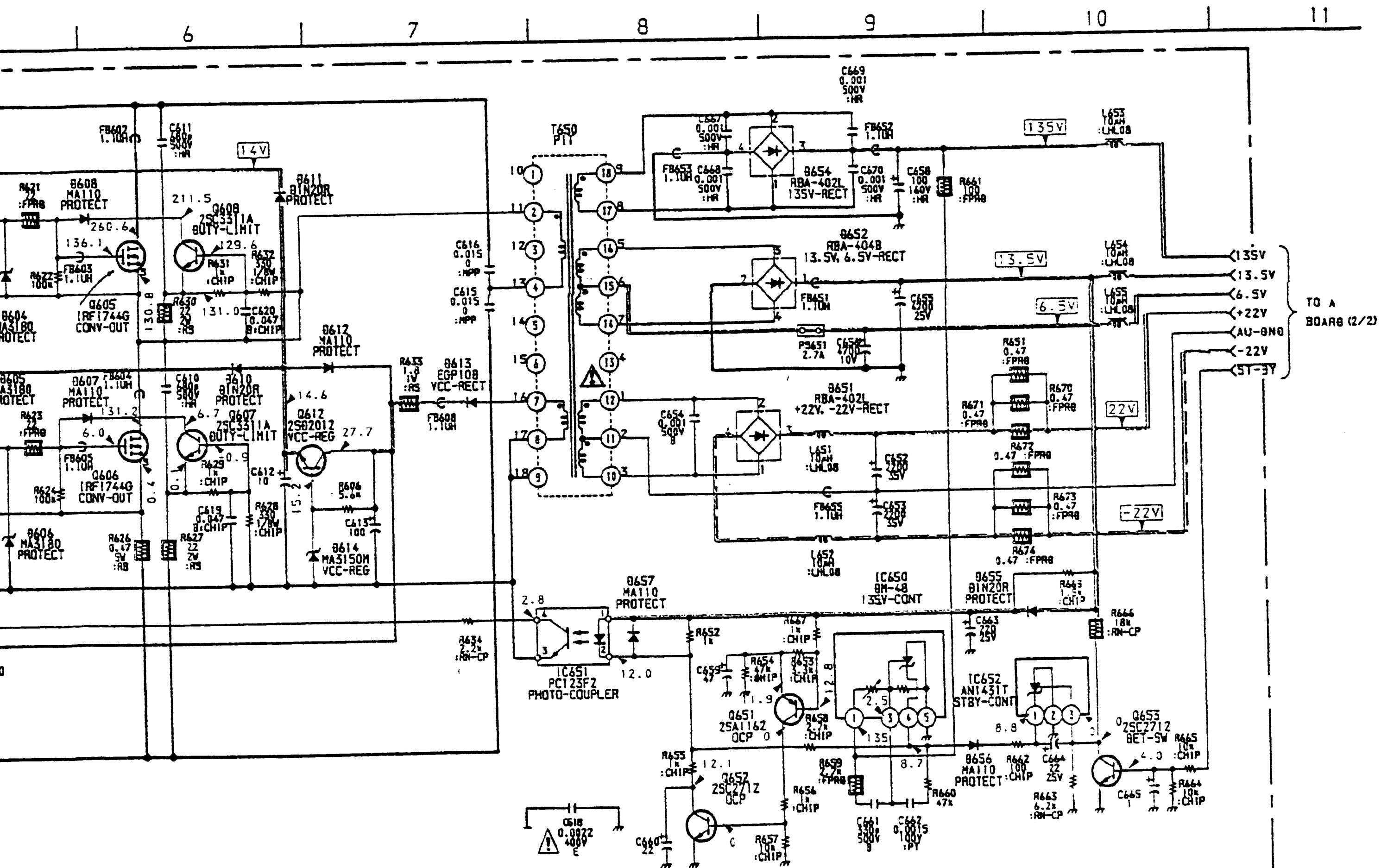
NOTE:
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

A BOARD

IC	
IC001	D-6, D-9
IC002	E-6
IC003	E-7
IC004	
IC301	A-12
IC302	C-5
IC303	C-11
IC601	F-2, F-14
IC602	F-2, F-14
IC650	A-1, A-15
IC651	E-3, E-13
IC652	B-2, B-14
IC1201	E-5
IC1202	D-5, D-11
IC2001	C-6
IC2002	C-7, C-9
IC2601	C-3, C-13
IC2602	C-4, C-12
IC2603	C-3, C-13

TRANSISTOR	
Q101	E-9
Q203	F-12
Q204	F-12
Q301	A-13
Q302	C-11
Q303	C-10
Q304	C-11
Q305	A-12
Q306	A-12
Q307	E-4
Q308	E-4


6
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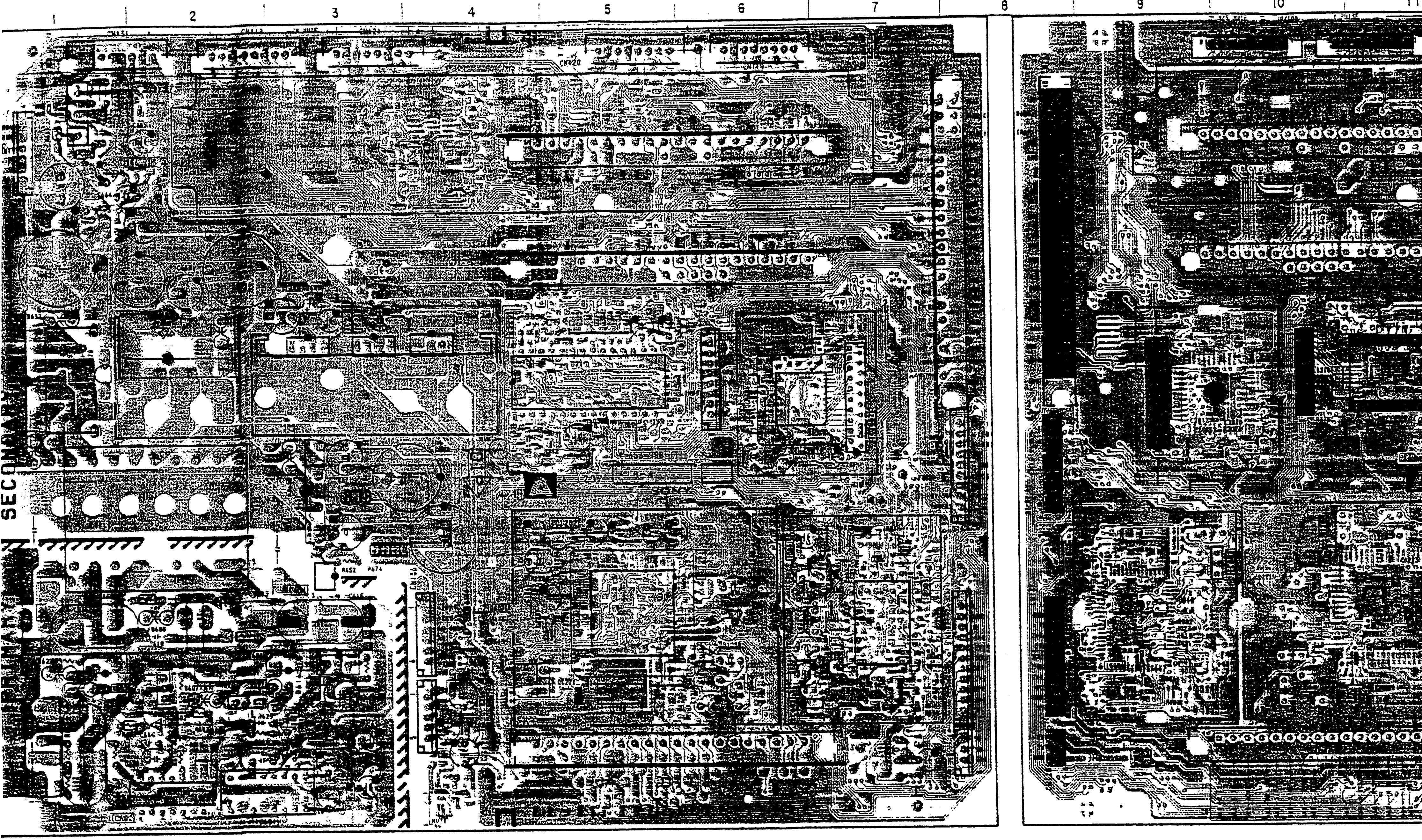
T650 PIT
C669 0.001 500V :HR
135V
L653 10μH :LHL08
D654 RBA-402L 135V-RECT
FB653 1.1UH
FB652 1.1UH
C658 100 160V :HR
R661 100 :FPRB
D652 RBA-404B 13.5V, 6.5V-RECT
13.5V
6.5V
L654 10μH :LHL08
L655 10μH :LHL08
FB651 1.1UH
C655 2200 25V
PS651 2.7A
D651 RBA-402L +22V, -22V-RECT
L651 10μH :LHL08
L652 10μH :LHL08
C652 2200 35V
C653 2200 35V
FB655 1.1UH
22V
-22V
R651 0.47 :FPRB
R670 0.47 :FPRB
R671 0.47 :FPRB
R672 0.47 :FPRB
R673 0.47 :FPRB
R674 0.47 :FPRB
135V
13.5V
6.5V
+22V
AU-GND
-22V
ST-3Y
TO A BOARD (2/2)
D657 MA110 PROTECT
IC651 PC123F2 PHOTO-COUPLER
IC650 BM-48 135V-CONT
D655 B1N20R PROTECT
Q651 2SA1162 OCP
Q652 2SC2712 OCP
IC652 AN1431T STBY-CONT
D656 MA110 PROTECT
Q653 2SC2712 SET-SW
C618 0.0022 400V E
D608 MA110 PROTECT
Q608 2SC3311A DUTY-LIMIT
Q605 IRF1744G CONV-OUT
D611 B1N20R PROTECT
D612 MA110 PROTECT
D613 EGP10B VCC-RECT
Q606 IRF1744G CONV-OUT
Q607 2SC3311A DUTY-LIMIT
Q612 2SD2012 VCC-REG
D614 MA3150M VCC-REG
D604 MA3180 PROTECT
14V
B-SS4919<DE.>-A..-PZ

Schematic diagram

← A (2/2) board

A SOUND DECODE & PROCESSOR, VIDEO PROCESSOR, MAIN µCON, RGB MATRIX, TEXT PROCESSOR, POWER SUPPLY, OVP

- A BOARD -



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SECONDARY
PRIMARY
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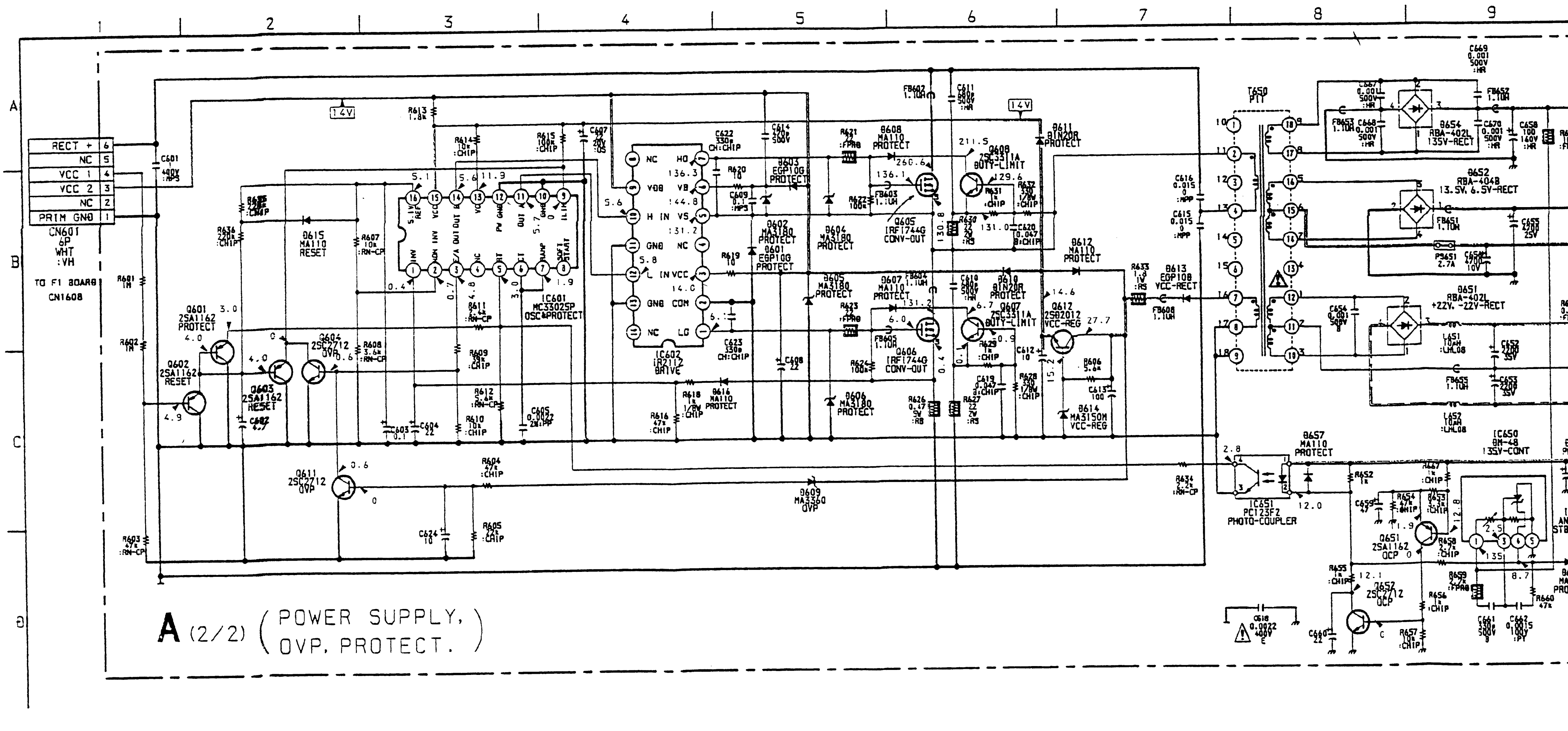

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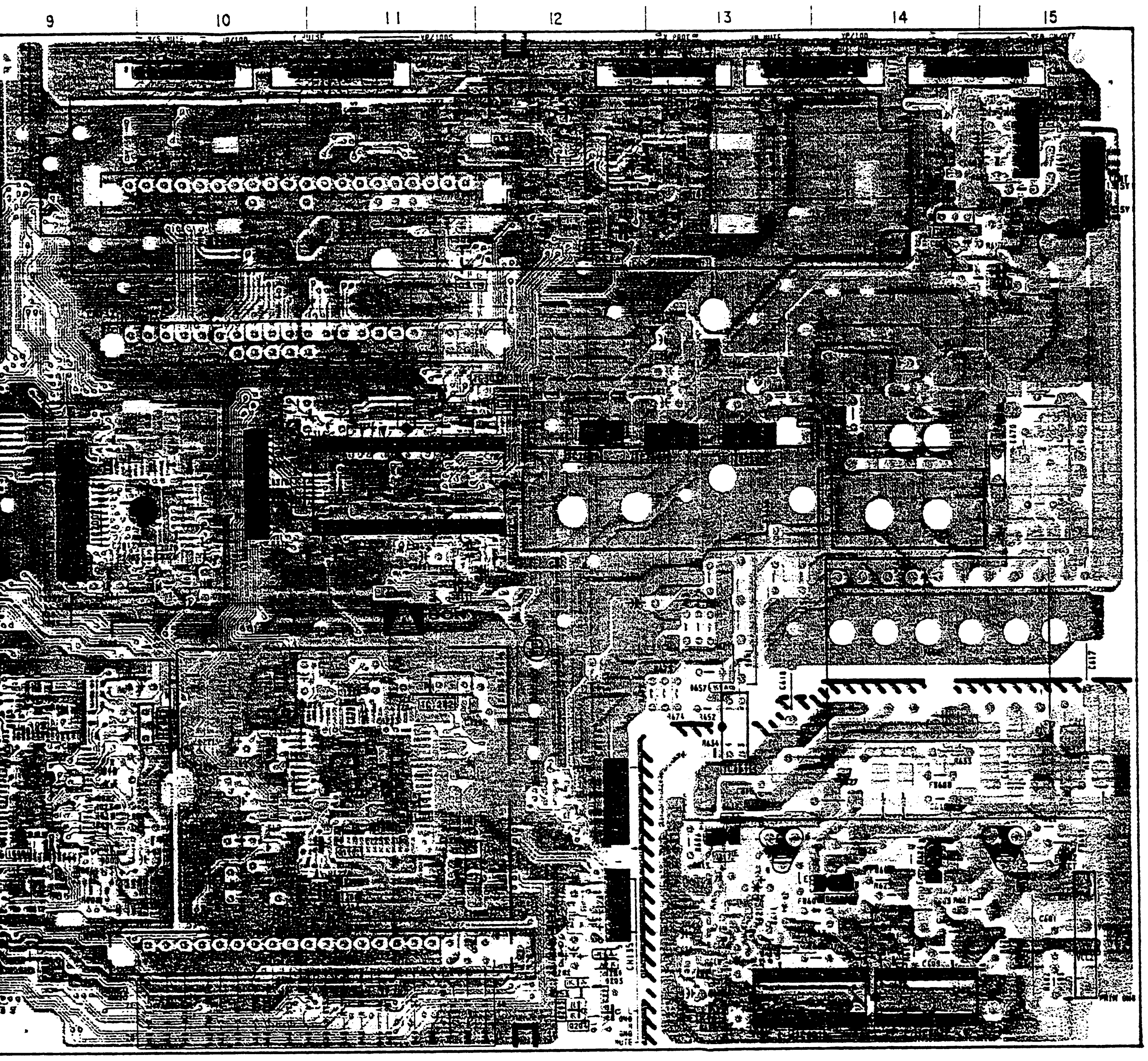
8
9
A
B
C
D
CN601 6P WHT :VH
RECT +
NC
VCC 1
VCC 2
NC
PRIM GND
TO F1 BOARD CN1608
Q601 2SA1162 PROTECT
Q602 2SA1162 RESET
Q603 2SA1162 RESET
Q604 2SC2712 OVP
Q611 2SC2712 OVP
D615 MA110 RESET
IC601 MC33025P OSC&PROTECT
IC602 IR2112 DRIVE
Q605 IRF1744G CONV-OUT
Q606 IRF1744G CONV-OUT
Q607 2SC3311A BOTT-LIMIT
Q608 2SC3311A BOTT-LIMIT
Q612 2SB2012 VCC-REG
D601 EGP10G PROTECT
D602 MA3180 PROTECT
D603 EGP10G PROTECT
D604 MA3180 PROTECT
D605 MA3180 PROTECT
D606 MA3180 PROTECT
D608 MA110 PROTECT
D609 MA3360 OVP
D610 B1N20R PROTECT
D611 B1N20R PROTECT
D612 MA110 PROTECT
D613 EGP10B VCC-RECT
D614 MA3150M VCC-REG
D616 MA110
14V
T650 PIT
D654 RBA-402L 135V-RECT
D652 RBA-404B 13.5V, 6.5V-RECT
D651 RBA-402L +22V, -22V-RECT
D657 MA110 PROTECT
IC651 PC123F2 PHOTO-COUPLER
Q651 2SA1162 OCP
Q652 2SC2712 OCP
IC650 SM-48 135V-CONT

A (2/2) (POWER SUPPLY, OVP, PROTECT.)

Note :

- ⌐⌐⌐⌐ : Pattern from the side which enables seeing.
- ▨ : Pattern of the rear side.


9
10
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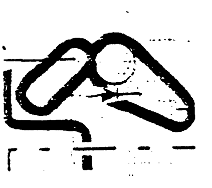
12
13
14
15

A BOARD

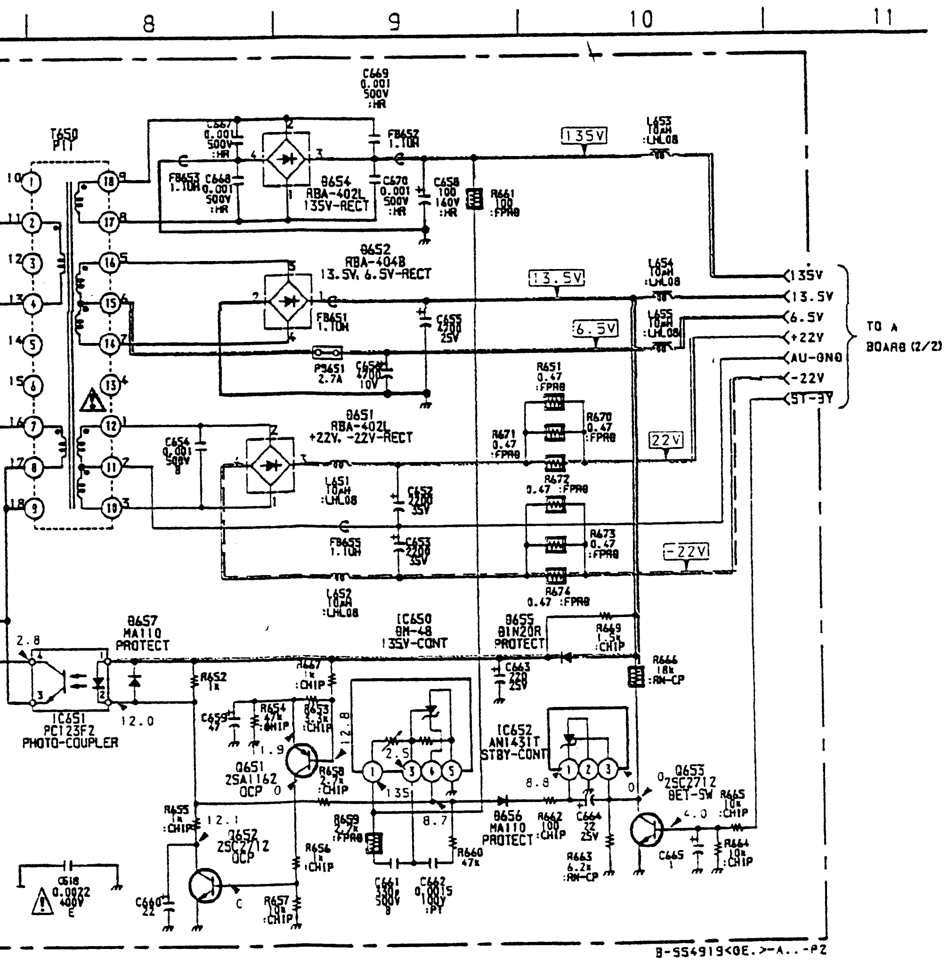
IC	
IC001	D-6, D-9
IC002	E-6
IC003	E-7
IC004	
IC301	A-12
IC302	C-5
IC303	C-11
IC601	F-2, F-14
IC602	F-2, F-14
IC650	A-1, A-15
IC651	E-3, E-13
IC652	B-2, B-14
IC1201	E-5
IC1202	D-5, D-11
IC2001	C-6
IC2002	C-7, C-9
IC2601	C-3, C-13
IC2602	C-4, C-12
IC2603	C-3, C-13

TRANSISTOR	
Q101	E-9
Q203	F-12
Q204	F-12
Q301	A-13
Q302	C-11
Q303	C-10
Q304	C-11
Q305	A-12
Q306	A-12
Q307	E-4
Q308	E-4
Q309	A-11
Q310	D-11
Q311	D-11
Q312	C-11
Q601	F-3
Q602	F-3
Q603	F-3
Q604	F-3
Q605	E-1, E-15
Q606	E-3, E-13
Q607	E-2, E-14
Q608	E-2, E-14
Q611	F-3
Q612	E-3, E-13
Q651	B-15
Q652	B-15
Q653	A-14
Q1201	E-10
Q1202	E-10
Q1203	E-10
Q1204	E-11
Q1205	E-11
Q1206	E-11
Q1207	D-10
Q1208	E-11
Q1209	E-10
Q1210	F-10
Q2006	C-9

DIODE	
D009	E-9
D010	E-9
D011	E-7
D012	E-9
D201	F-12
D202	F-4
D203	F-12
D204	F-12
D301	C-12
D302	D-10
D303	D-9
D304	D-12
D305	
D306	C-11
D307	C-11
D308	E-4
D309	C-10
D310	C-10
D311	C-10
D601	F-2, F-14
D602	E-2
D603	F-2, F-14
D604	E-2
D605	F-14
D606	F-2
D607	E-2
D608	E-1
D609	F-3
D610	F-2, F-13
D611	F-3, F-13
D612	E-13
D613	E-2, E-14
D614	E-3
D615	F-13
D651	D-13
D652	C-2, C-14
D654	C-1, C-15
D655	C-2, C-14
D656	A-15
D657	D-13



NOTE:
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.


8
9
10
11
T650
PIT
C669 0.001 500V :HR
C667 0.001 500V :HR
FB653 1.1UH
C668 0.001 500V :HR
D654 RBA-402L 135V-RECT
FB652 1.1UH
C670 0.001 500V :HR
C658 100 160V :HR
R661 100 :FPRB
135V
L653 10μH :LHL08
D652 RBA-404B 13.5V, 6.5V-RECT
13.5V
L654 10μH :LHL08
FB651 1.1UH
C655 4700 25V
6.5V
L655 10μH :LHL08
PS651 2.7A
C656 4700 10V
D651 RBA-402L +22V, -22V-RECT
C654 0.001 500V
L651 10μH :LHL08
C652 2200 35V
FB655 1.1UH
C653 2200 35V
L652 10μH :LHL08
R651 0.47 :FPRB
R670 0.47 :FPRB
R671 0.47 :FPRB
R672 0.47 :FPRB
R673 0.47 :FPRB
R674 0.47 :FPRB
22V
-22V
135V
13.5V
6.5V
+22V
AU-GND
-22V
ST-3V
TO A BOARD (2/2)
D657 MA110 PROTECT
IC650 BM-48 135V-CONT
D655 BIN20R PROTECT
R669 1.5k :CHIP
R666 18k :RN-CP
C663 220 25V
IC651 PC123F2 PHOTO-COUPLER
2.8
12.0
R652 1k
R667 1k :CHIP
C659 47
R654 47k :CHIP
R653 3.3k :CHIP
1.9
12.8
Q651 2SA1162 OCP
R658 2.7k :CHIP
2.5
135
8.7
IC652 AN1431T STBY-CONT
8.8
0
Q653 2SC2712 BET-SW
R665 10k :CHIP
4.0
R655 1k :CHIP
12.1
Q652 2SC2712 OCP
R659 2.7k :FPRB
R656 1k :CHIP
D656 MA110 PROTECT
R662 100 :CHIP
C664 22 25V
R660 47k
R663 6.2k :RN-CP
C665 1
R664 10k :CHIP
C618 0.0022 400V E
C660 22
R657 10k :CHIP
C661 330p 500V B
C662 0.0015 100V :PT
B-SS4919<OE.>-A..-PZ

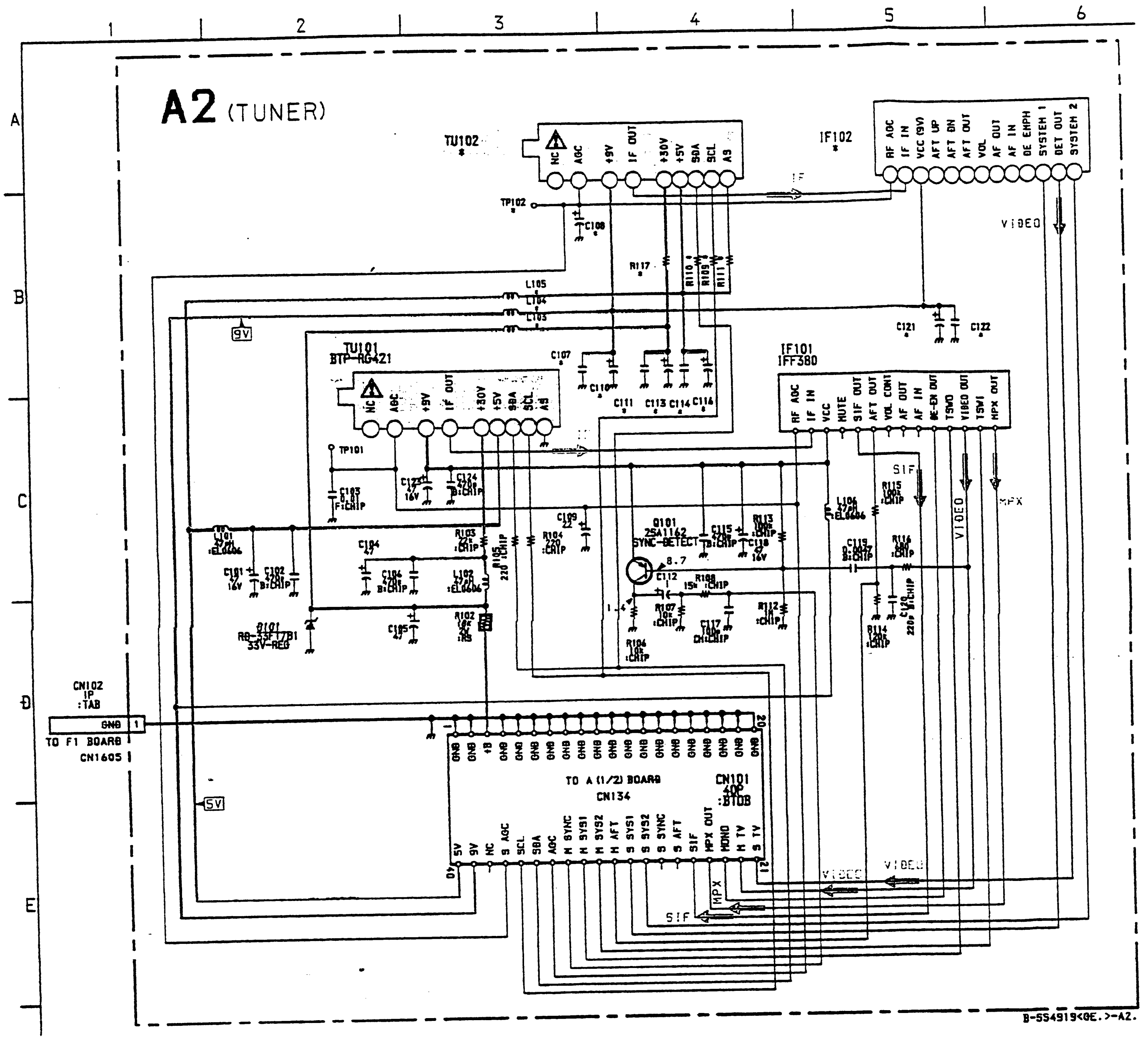
Schematic diagram

← A (2/2) board

Schematic diagrams

A2 F1 F2 H1

H2 H3 H4 K VM boards →

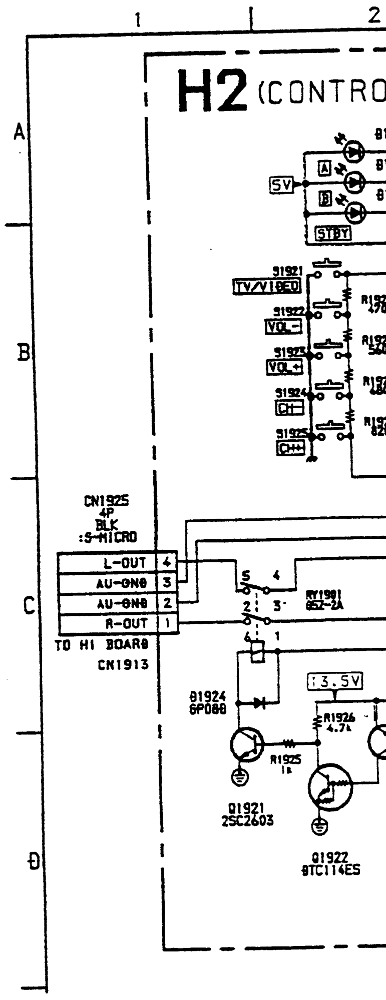


1
2
3
4
5
6
A
B
C
D
E
A2 (TUNER)
TU102
NC
AGC
+9V
IF OUT
+30V
+5V
SDA
SCL
AS
IF102
RF AGC
IF IN
VCC (9V)
AFT UP
AFT DN
AFT OUT
VOL
AF OUT
AF IN
DE EMPH
SYSTEM 1
DET OUT
SYSTEM 2
IF
VIDEO
TP102
C108
R117
R110
R109
R111
L105
L104
L103
9V
C121
C122
TU101
BTP-RG421
IF101
IFF380
C107
C110
C111
C113
C114
C116
RF AGC
IF IN
VCC
MUTE
SIF OUT
VOL CONT
AF OUT
AF IN
DE-EM OUT
TSWO
VIDEO OUT
TSWI
MPX OUT
TP101
SIF
MPX
VIDEO
Q101
2SA1162
SYNC-DETECT
D101
RD-33FT7B1
33V-REG
CN102
1P
:TAB
GND
TO F1 BOARD
CN1605
TO A (1/2) BOARD
CN134
CN101
40P
:BTOB
5V
9V
NC
S AGC
SCL
SDA
AGC
H SYNC
H SYS1
H SYS2
H AFT
S SYS1
S SYS2
S SYNC
S AFT
SIF
MPX OUT
MONO
H TV
S TV
GND
5V
SIF
MPX
VIDEO
B-554919<GE.>-A2.

A2 BOARD * MARK

Ref. No.	Location	28 INCH	32 INCH
C107	B – 3	–	470p
C108	B – 3	–	22
C110	B – 4	–	47 16V
C111	B – 4	–	470p
C113	B – 4	–	47
C114	B – 4	–	470p
C116	B – 4	–	47 16V
C121	B – 5	–	47 16V
C122	B – 5	–	470p
IF102	A – 5	–	IFD380A
L103	B – 3	–	47 µH
L104	B – 3	–	47 µH
L105	B – 3	–	47 µH
R109	B – 4	–	220
R110	B – 4	–	220
R111	B – 4	–	10k
R117	B – 4	–	22k
TP102	B – 3	–	○
TU102	A – 3	–	BTP-RG421

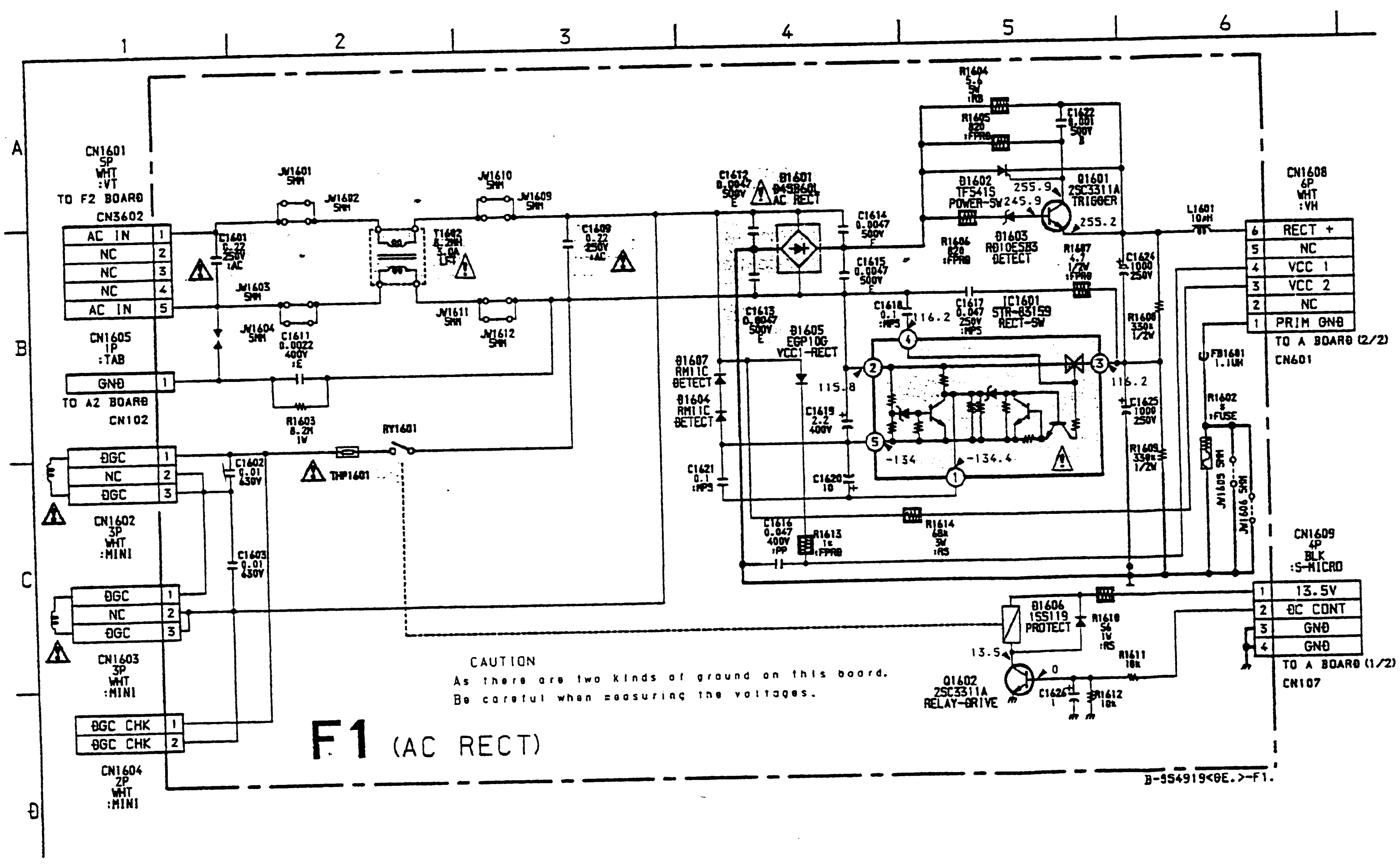
○:TO BE MOUNT
–: NOT MOUNT



1
2
A
B
C
D
H2 (CONTRO
5V
STBY
S1921
TV/VIDEO
S1922
VOL–
S1923
VOL+
S1924
CH–
S1925
CH+
CN1925
4P
BLK
:S-MICRO
L-OUT
AU-GND
AU-GND
R-OUT
TO H1 BOARD
CN1913
13.5V
Q1924
Q1921
2SC2603
Q1922
DTC114ES

H2 BOARD * MARK

Ref. No.	Location	28 INCH
CN1922	B – 4	9P WHT
D1921	A – 2	SLR-54VC12
D1922	A – 2	SLR-54VC12
D1923	A – 2	SLR-54VC12



1
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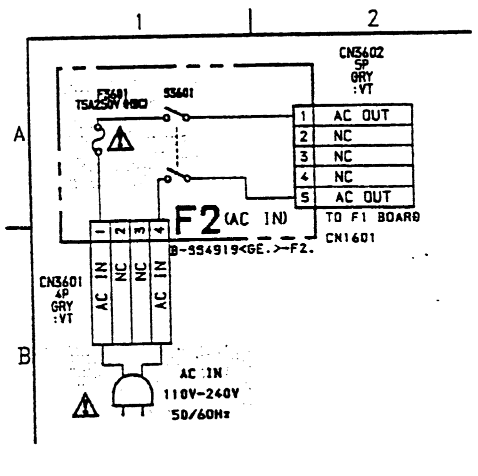
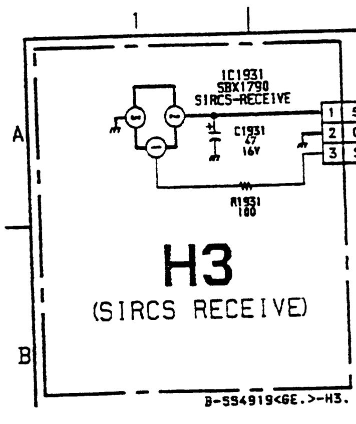
6
A
B
C
D
CN1601
5P
WHT
:VT
TO F2 BOARD
CN3602
AC IN
NC
NC
NC
AC IN
CN1605
1P
:TAB
GND
TO A2 BOARD
CN102
DGC
NC
DGC
CN1602
3P
WHT
:MINI
DGC
NC
DGC
CN1603
3P
WHT
:MINI
DGC CHK
DGC CHK
CN1604
2P
WHT
:MINI
JW1601
JW1602
JW1603
JW1604
JW1609
JW1610
JW1611
JW1612
C1601
T1602
C1609
C1611
R1603
RY1601
THP1601
C1602
C1603
C1612
D1601
D4SB60L
AC RECT
C1614
C1615
D1602
TF541S
POWER-SW
D1603
RD10ESB3
DETECT
Q1601
2SC3311A
TRIGGER
R1604
R1605
C1622
R1606
R1607
C1624
C1613
D1605
EGP10G
VCC1-RECT
C1618
C1617
IC1601
STR-8S159
RECT-SW
D1607
RM11C
DETECT
D1604
RM11C
DETECT
C1619
C1621
C1620
C1616
R1613
R1614
L1601
FB1681
R1608
R1602
R1609
C1625
JW1605
JW1606
255.9
245.9
255.2
116.2
115.8
116.2
-134
-134.4
13.5
D1606
1SS119
PROTECT
R1610
R1611
Q1602
2SC3311A
RELAY-DRIVE
C1626
R1612
CN1608
6P
WHT
:VH
RECT +
NC
VCC 1
VCC 2
NC
PRIM GND
TO A BOARD (2/2)
CN601
CN1609
6P
BLK
:S-MICRO
13.5V
DC CONT
GND
GND
TO A BOARD (1/2)
CN107
F1 (AC RECT)
B-554919<GE.>-F1.

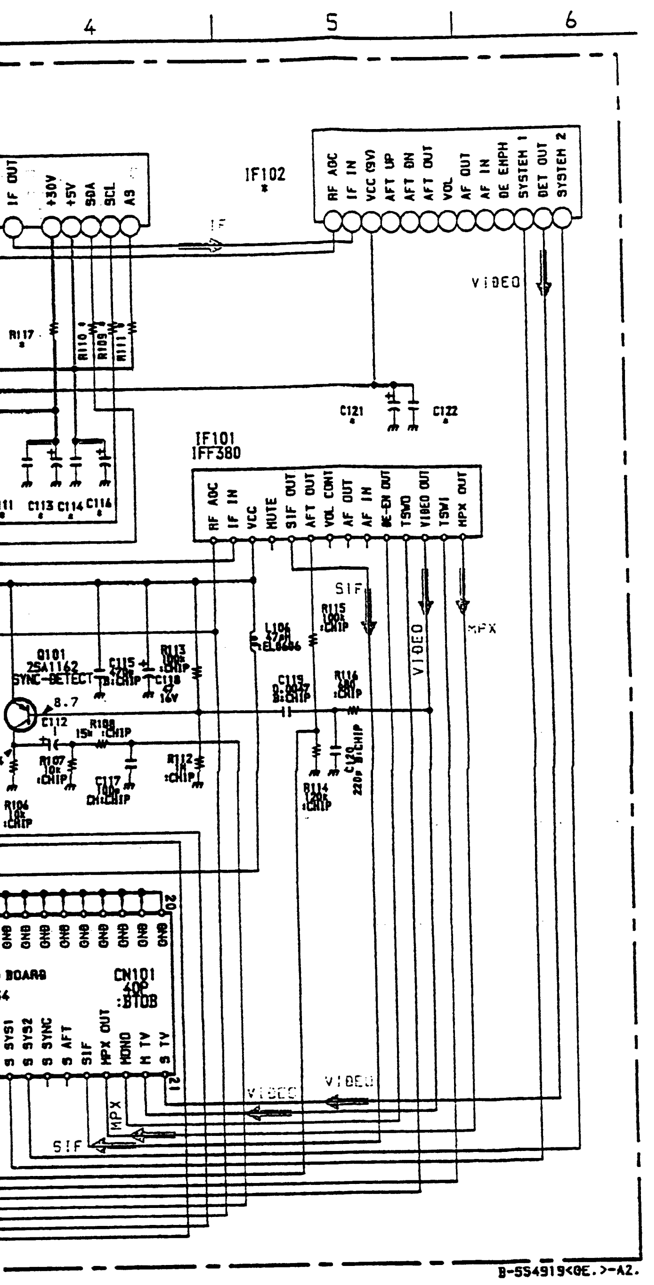
CAUTION
As there are two kinds of ground on this board.
Be careful when measuring the voltages.



1
2
A
B
CN3602
5P
GRY
:VT
F3601
T5A250V
S3601
AC OUT
NC
NC
NC
AC OUT
F2 (AC IN)
TO F1 BOARD
CN1601
B-554919<GE.>-F2.
CN3601
4P
GRY
:VT
AC IN
NC
NC
AC IN
AC IN
110V-240V
50/60Hz



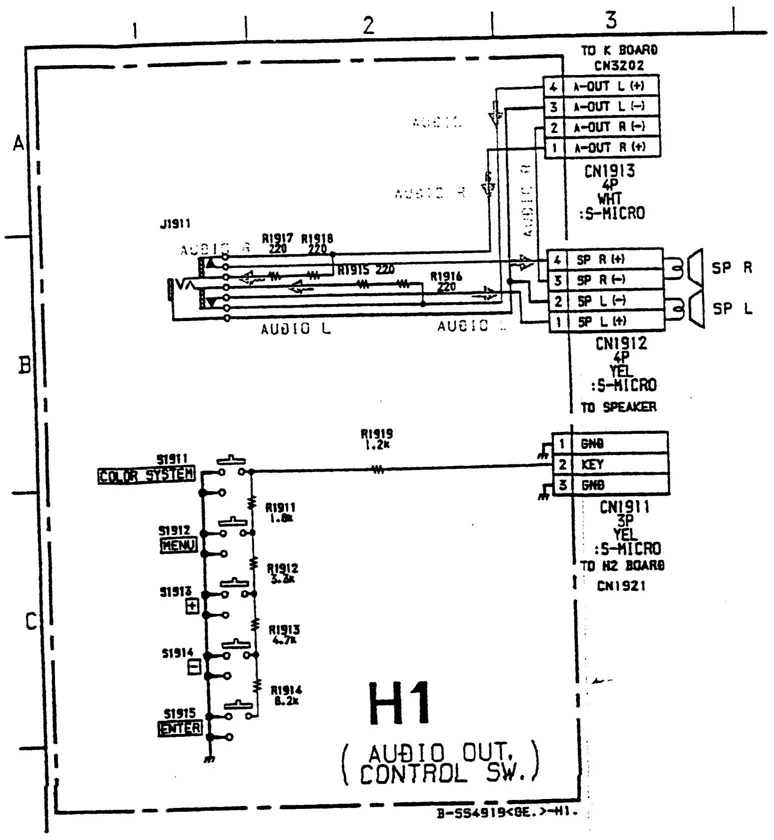
1
A
B
IC1931
SBX1790
SIRCS-RECEIVE
C1931
47
16V
R1931
100
H3
(SIRCS RECEIVE)
B-554919<GE.>-H3.

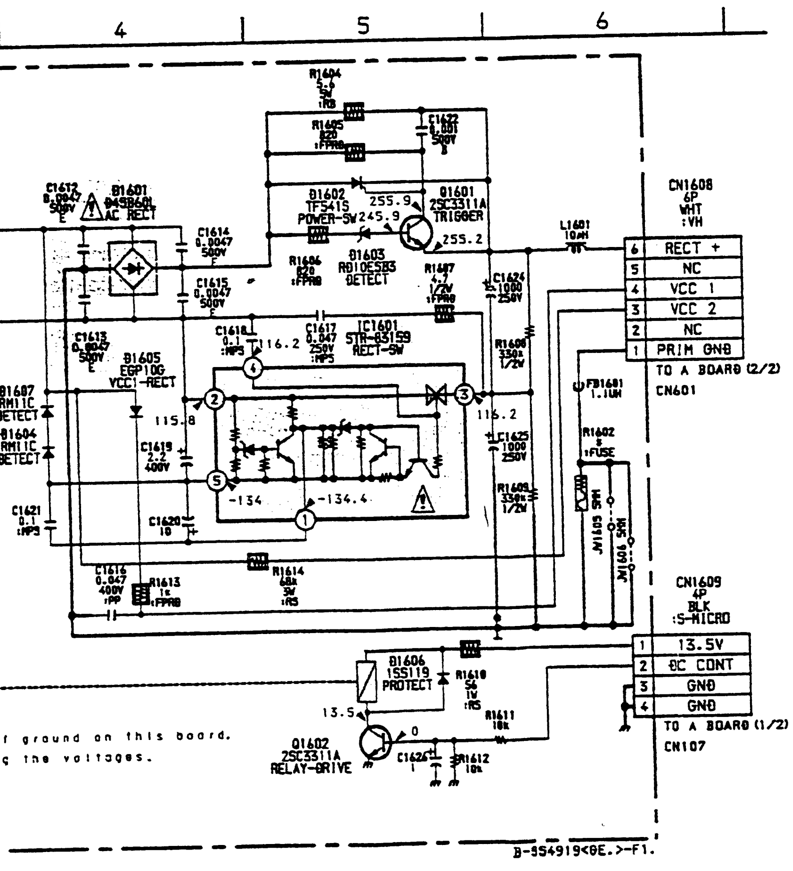

IF102
IF101
IFF380
Q101
2SA1162
SYNC-DETECT
CN101
40P
:BTOB
VIDEO
SIF
MPX
B-SS4919<GE.>-A2.

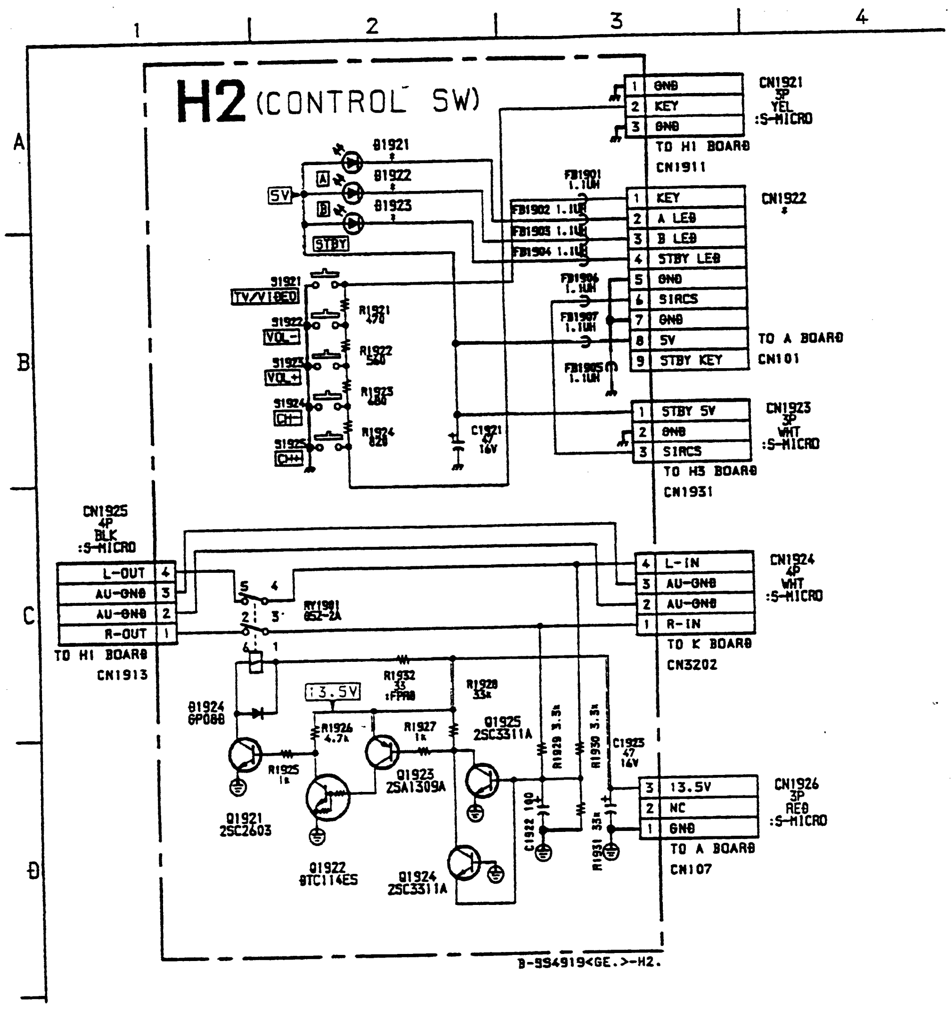
A2 BOARD ✻ MARK

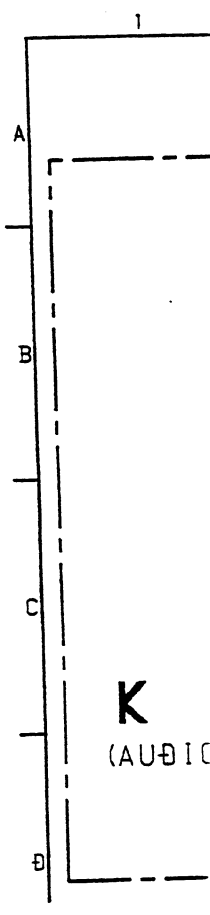
Ref. No.	Location	28 INCH	32 INCH
C107	B-3	-	470p
C108	B-3	-	22
C110	B-4	-	47 16V
C111	B-4	-	470p
C113	B-4	-	47
C114	B-4	-	470p
C116	B-4	-	47 16V
C121	B-5	-	47 16V
C122	B-5	-	470p
IF102	A-5	-	IFD380A
L103	B-3	-	47 µH
L104	B-3	-	47 µH
L105	B-3	-	47 µH
R109	B-4	-	220
R110	B-4	-	220
R111	B-4	-	10k
R117	B-4	-	22k
TP102	B-3	-	○
TU102	A-3	-	BTP-RG421

○:TO BE MOUNT
-: NOT MOUNT


TO K BOARD
CN3202
A-OUT L (+)
A-OUT L (-)
A-OUT R (-)
A-OUT R (+)
CN1913
4P
WHT
:S-MICRO
J1911
AUDIO L
AUDIO R
SP R
SP L
CN1912
4P
YEL
:S-MICRO
TO SPEAKER
COLOR SYSTEM
MENU
ENTER
GND
KEY
CN1911
3P
YEL
:S-MICRO
TO H2 BOARD
CN1921
H1
(AUDIO OUT, CONTROL SW.)
B-SS4919<GE.>-H1.


Q1601
2SC3311A
TRIGGER
Q1602
IF5415
POWER-SW
Q1603
RD10ES83
DETECT
IC1601
STR-85159
RECT-SW
D1605
EGP10G
VCC1-RECT
CN1608
6P
WHT
:VH
RECT +
NC
VCC 1
VCC 2
NC
PRIM GND
TO A BOARD (2/2)
CN601
CN1609
4P
BLK
:S-MICRO
13.5V
EC CONT
GND
GND
TO A BOARD (1/2)
CN107
D1606
1SS119
PROTECT
Q1602
2SC3311A
RELAY-DRIVE
B-SS4919<GE.>-F1.

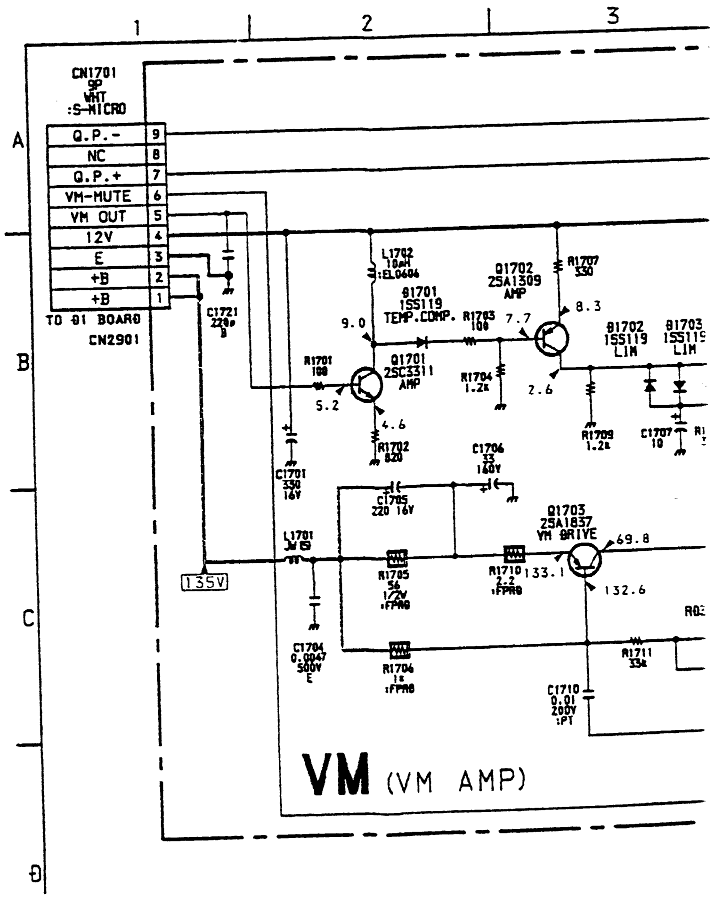

H2 (CONTROL SW)
CN1921
3P
YEL
:S-MICRO
TO H1 BOARD
CN1911
CN1922
TO A BOARD
CN101
TV/VIDEO
VOL-
VOL+
CH-
CH+
STBY
CN1923
3P
WHT
:S-MICRO
TO H3 BOARD
CN1931
CN1925
4P
BLK
:S-MICRO
TO H1 BOARD
CN1913
CN1924
4P
WHT
:S-MICRO
TO K BOARD
CN3202
CN1926
3P
RED
:S-MICRO
TO A BOARD
CN107
RY1901
Q1921
2SC2603
Q1922
DTC114ES
Q1923
2SA1309A
Q1924
2SC3311A
Q1925
2SC3311A
B-SS4919<GE.>-H2.

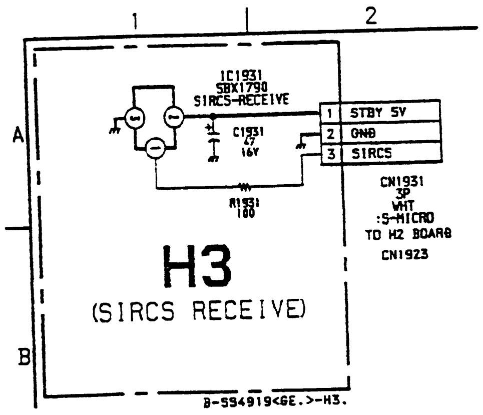


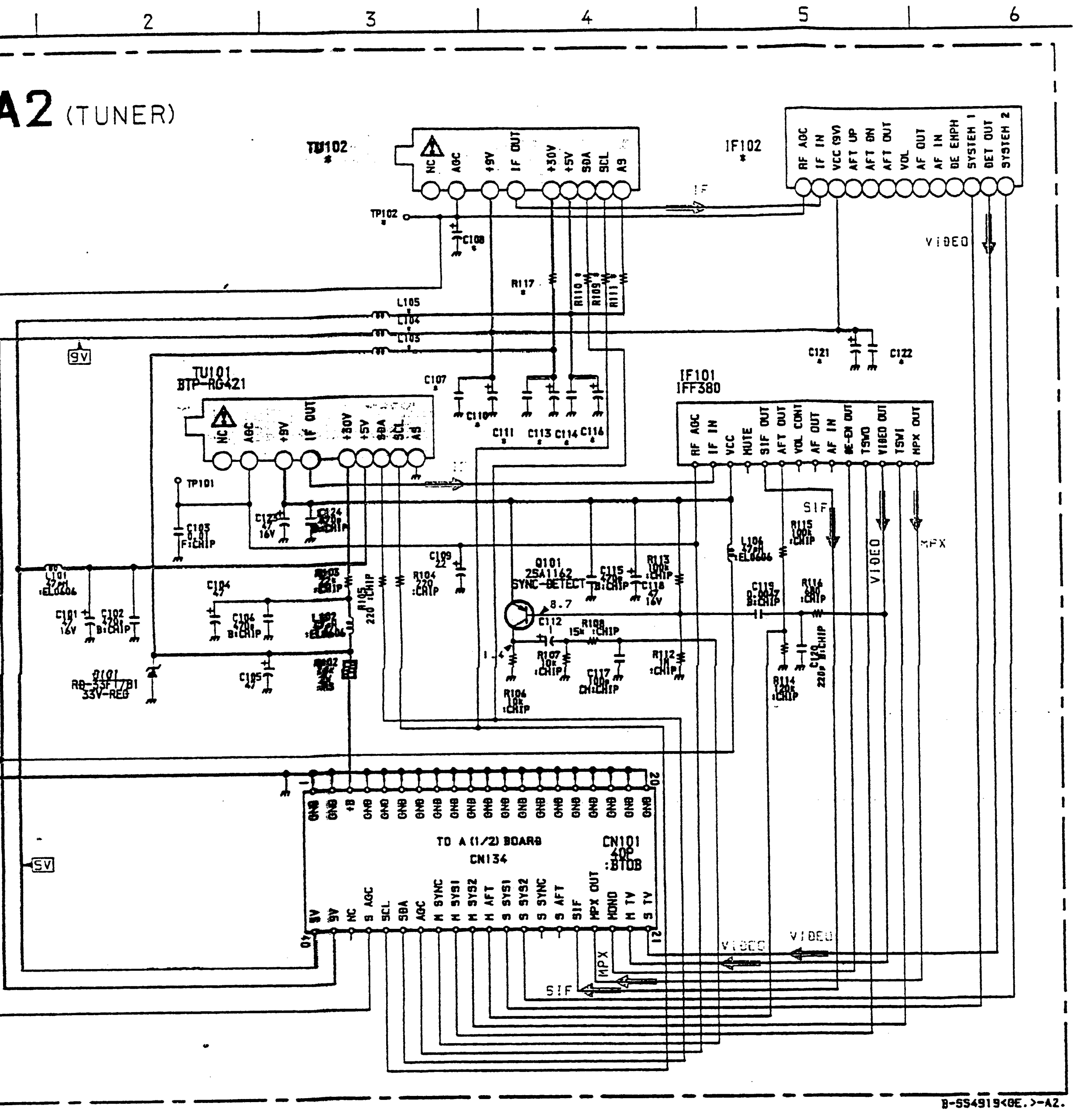
H2 BOARD ✻ MARK

Ref. No.	Location	28 INCH	32 INCH
CN1922	B-4	9P WHT	9P WHT-L
D1921	A-2	SLR-54VC12	SEL1222R-C, D
D1922	A-2	SLR-54VC12	SEL1222R-C, D
D1923	A-2	SLR-54VC12	SEL1222R-C, D

○:TO BE MOUNT
-: NOT MOUNT


CN1701
9P
WHT
:S-MICRO
Q.P.-
NC
Q.P.+
VM-MUTE
VM OUT
12V
E
+B
+B
TO D1 BOARD
CN2901
Q1701
2SC3311
AMP
Q1702
2SA1309
AMP
D1701
1SS119
TEMP.COMP.
Q1703
2SA1837
VM DRIVE
135V
VM (VM AMP)

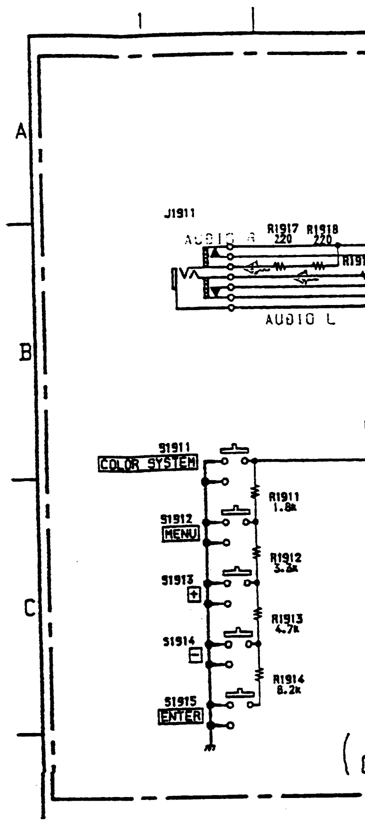

IC1931
SBX1790
SIRCS-RECEIVE
STBY 5V
GND
SIRCS
CN1931
3P
WHT
:S-MICRO
TO H2 BOARD
CN1923
H3
(SIRCS RECEIVE)
B-SS4919<GE.>-H3.

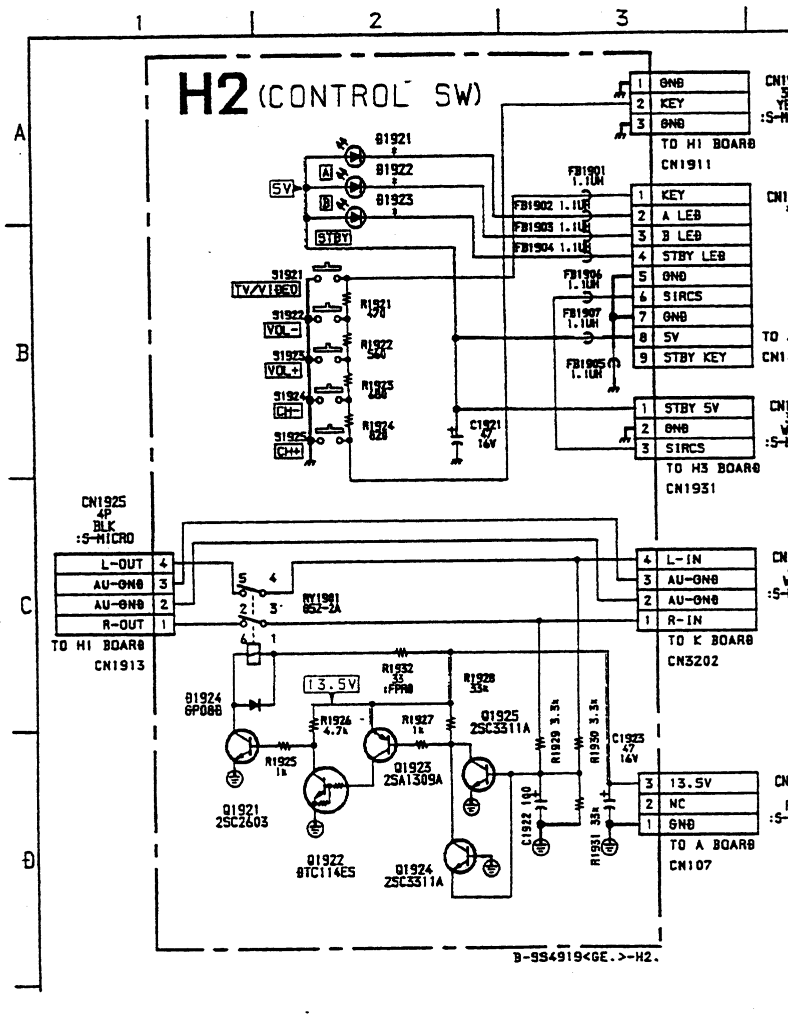

A2 (TUNER)
TU102
IF102
TU101
BTP-RG421
IF101
IFF380
TO A (1/2) BOARD
CN134
CN101
40P
:BTOB
VIDEO
SIF
HPX
B-554919<GE.>-A2.

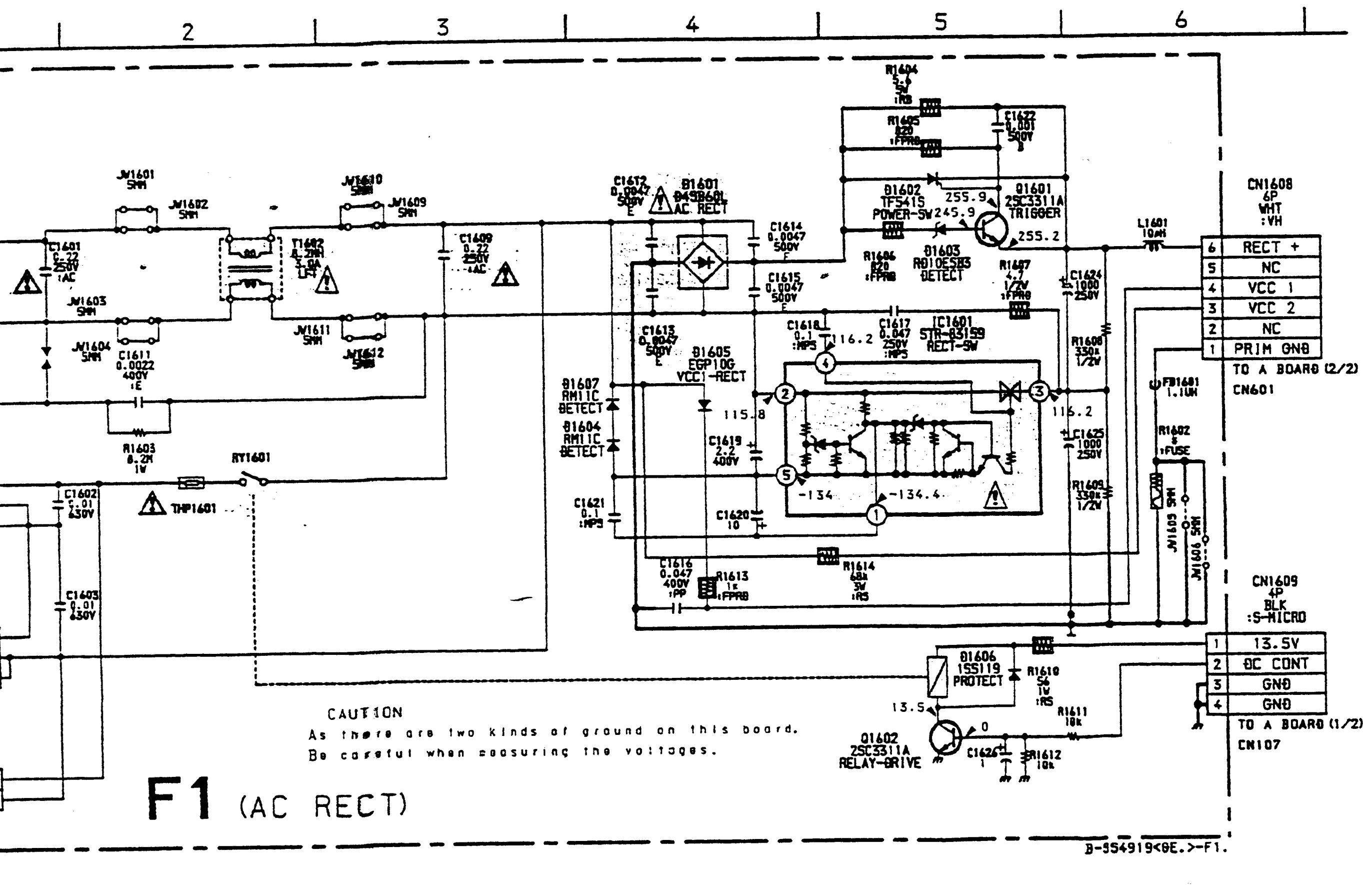
A2 BOARD ＊ MARK

Ref. No.	Location	28 INCH	32 INCH
C107	B – 3	–	470p
C108	B – 3	–	22
C110	B – 4	–	47 16V
C111	B – 4	–	470p
C113	B – 4	–	47
C114	B – 4	–	470p
C116	B – 4	–	47 16V
C121	B – 5	–	47 16V
C122	B – 5	–	470p
IF102	A – 5	–	IFD380A
L103	B – 3	–	47 µH
L104	B – 3	–	47 µH
L105	B – 3	–	47 µH
R109	B – 4	–	220
R110	B – 4	–	220
R111	B – 4	–	10k
R117	B – 4	–	22k
TP102	B – 3	–	○
TU102	A – 3	–	BTP-RG421

○:TO BE MOUNT
–: NOT MOUNT


J1911
AUDIO L
S1911
COLOR SYSTEM
S1912
MENU
S1913
S1914
S1915
ENTER

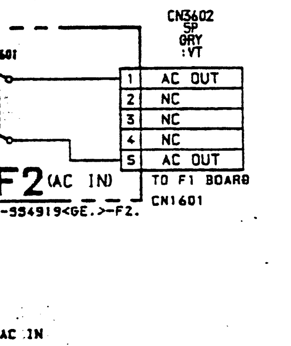

H2 (CONTROL SW)
TO H1 BOARD
CN1911
TO H3 BOARD
CN1931
TO K BOARD
CN3202
TO A BOARD
CN107
CN1925
TO H1 BOARD
CN1913
S1921
TV/VIDEO
VOL-
VOL+
CH-
CH+
B-554919<GE.>-H2.

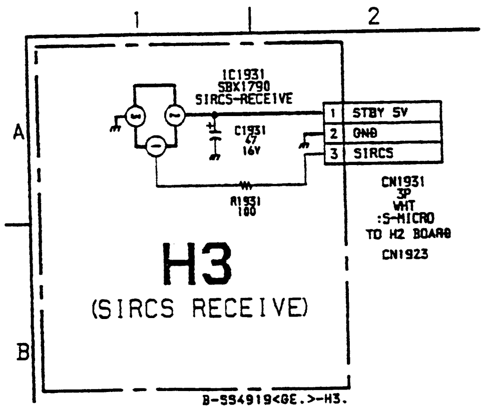

CN1608
6P
WHT
:VH
RECT +
NC
VCC 1
VCC 2
NC
PRIM GND
TO A BOARD (2/2)
CN601
CN1609
4P
BLK
:S-MICRO
13.5V
DC CONT
GND
GND
TO A BOARD (1/2)
CN107
IC1601
STR-83159
RECT-SW
CAUTION
As there are two kinds of ground on this board.
Be careful when measuring the voltages.
F1 (AC RECT)
B-554919<GE.>-F1.

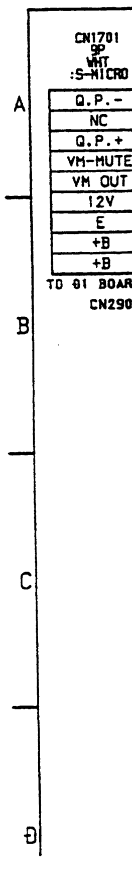
H2 BOARD ＊ MARK

Ref. No.	Location	28 INCH	32 INCH
CN1922	B – 4	9P WHT	9P WHT-L
D1921	A – 2	SLR-54VC12	SEL1222R-C, D
D1922	A – 2	SLR-54VC12	SEL1222R-C, D
D1923	A – 2	SLR-54VC12	SEL1222R-C, D

○:TO BE MOUNT
–: NOT MOUNT


CN3602
5P
GRY
:VT
AC OUT
NC
NC
NC
AC OUT
F2 (AC IN)
TO F1 BOARD
CN1601
-554919<GE.>-F2.
AC IN
0V-240V
0/60Hz

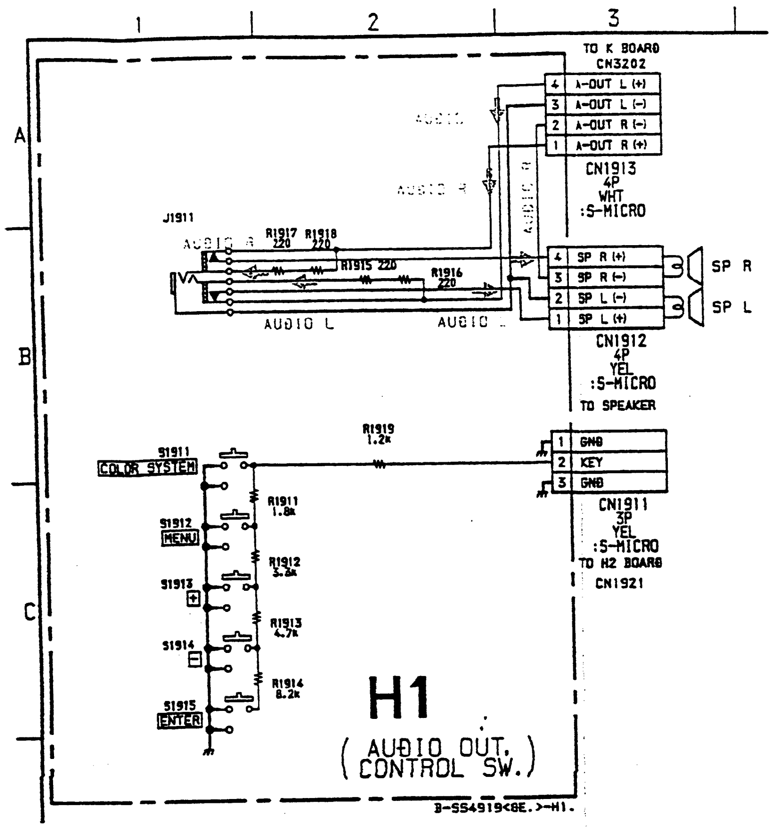

IC1931
SBX1790
SIRCS-RECEIVE
STBY 5V
GND
SIRCS
CN1931
3P
WHT
:S-MICRO
TO H2 BOARD
CN1923
H3
(SIRCS RECEIVE)
B-554919<GE.>-H3.

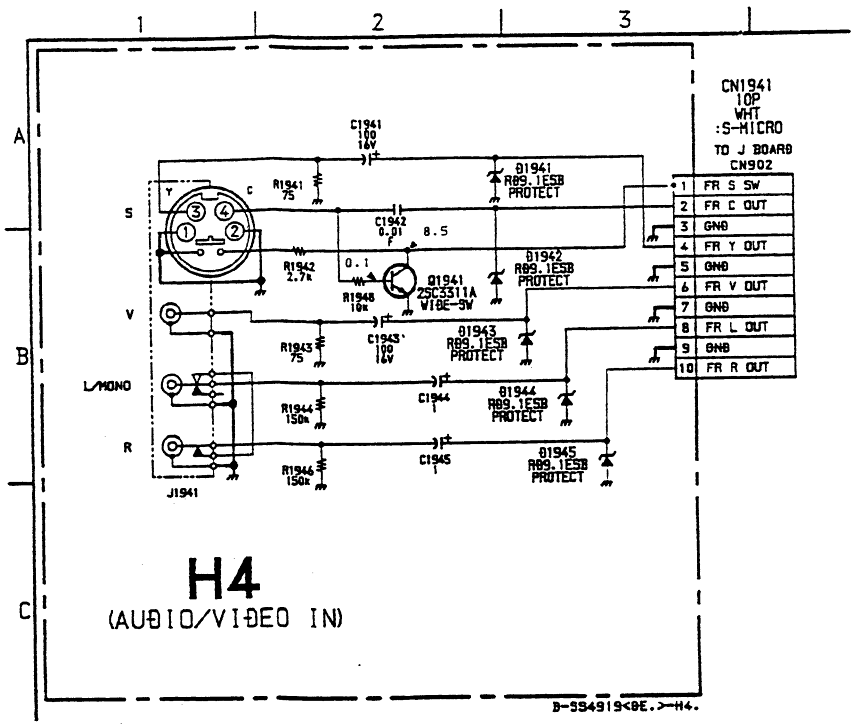

CN1701
Q.P.-
NC
Q.P.+
VM-MUTE
VM OUT
12V
E
+B
+B

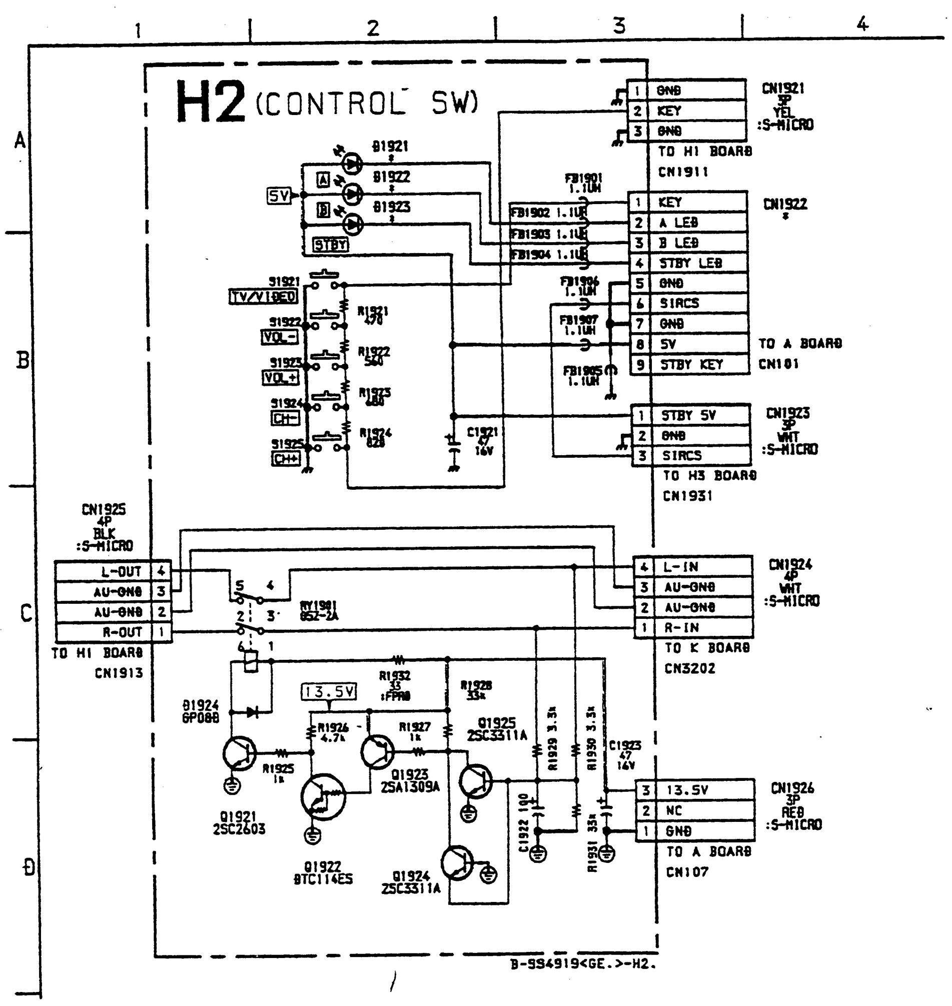
* MARK

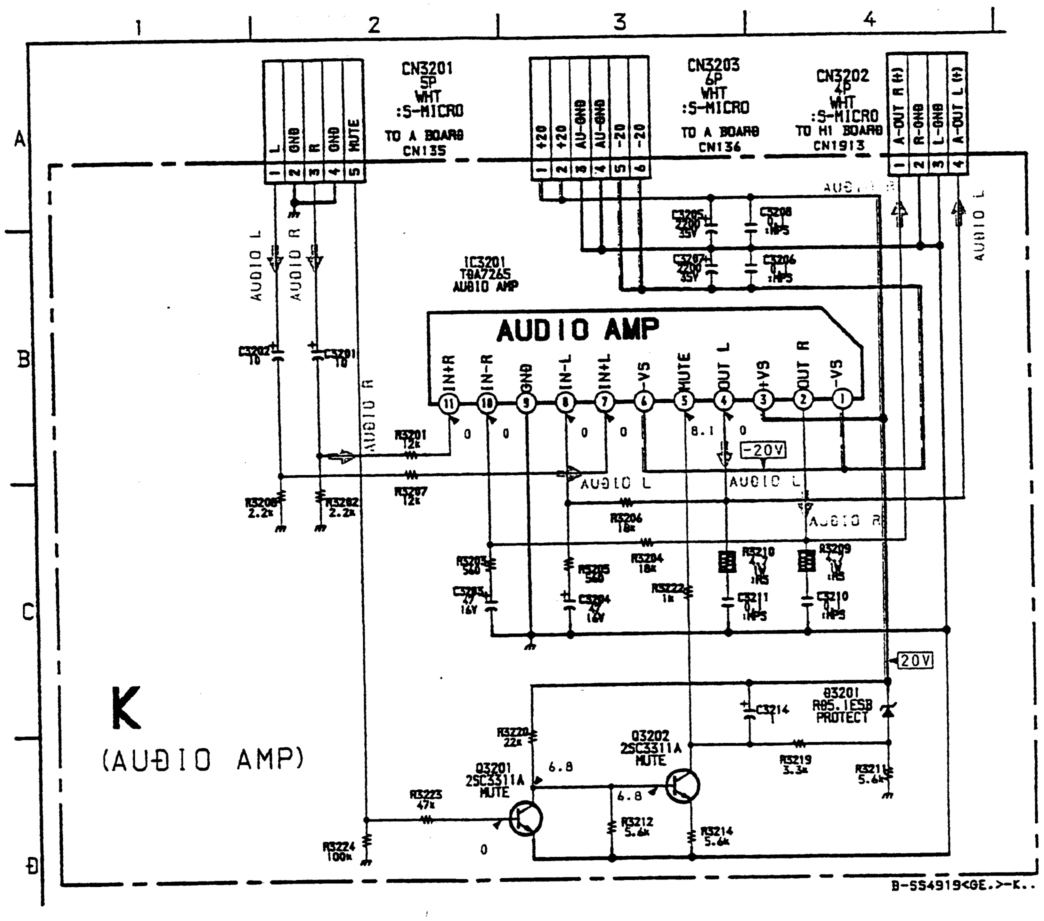
on	28 INCH	32 INCH
	-	470p
	-	22
	-	47 16V
	-	470p
	-	47
	-	470p
	-	47 16V
	-	47 16V
	-	470p
	-	IFD380A
	-	47 µH
	-	47 µH
	-	47 µH
	-	220
	-	220
	-	10k
	-	22k
	-	○
	-	BTP-RG421

○:TO BE MOUNT
-: NOT MOUNT


H1
(AUDIO OUT. CONTROL SW.)
TO K BOARD CN3202
CN1913 4P WHT :S-MICRO
CN1912 4P YEL :S-MICRO TO SPEAKER
CN1911 3P YEL :S-MICRO TO H2 BOARD CN1921
SP R
SP L
J1911
S1911 COLOR SYSTEM
S1912 MENU
S1913
S1914
S1915 ENTER
B-SS4919<GE.>-H1.


H4
(AUDIO/VIDEO IN)
CN1941 10P WHT :S-MICRO TO J BOARD CN902
J1941
Q1941 2SC3311A VIDE-SW
B-SS4919<GE.>-H4.

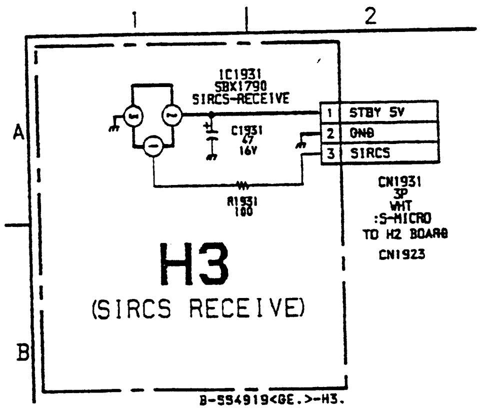

H2 (CONTROL SW)
CN1921 3P YEL :S-MICRO TO H1 BOARD CN1911
CN1922 TO A BOARD CN101
CN1923 3P WHT :S-MICRO TO H3 BOARD CN1931
CN1925 4P BLK :S-MICRO TO H1 BOARD CN1913
CN1924 4P WHT :S-MICRO TO K BOARD CN3202
CN1926 3P RED :S-MICRO TO A BOARD CN107
RY1901
13.5V
B-SS4919<GE.>-H2.

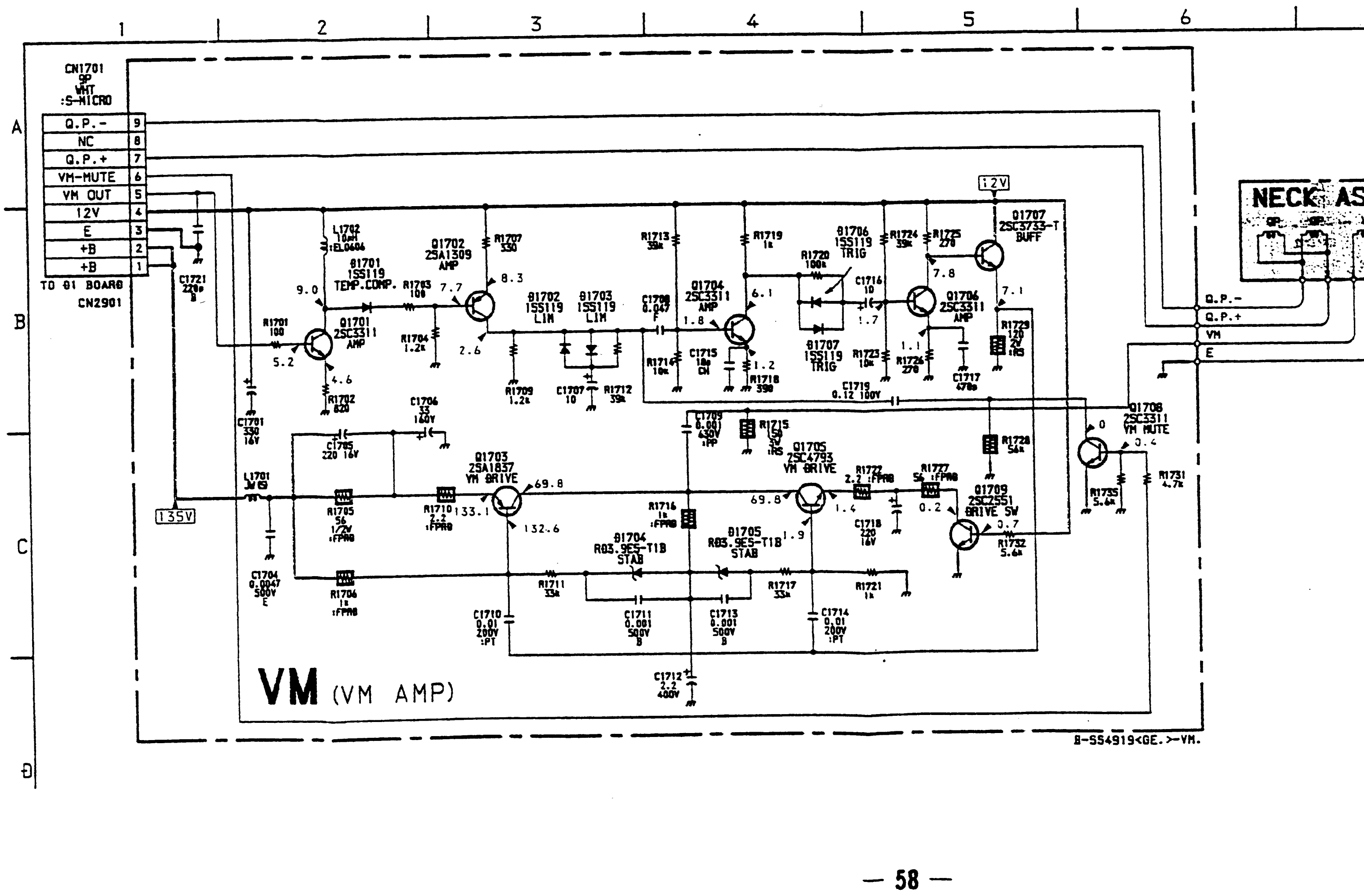

K
(AUDIO AMP)
CN3201 5P WHT :S-MICRO TO A BOARD CN135
CN3203 6P WHT :S-MICRO TO A BOARD CN136
CN3202 4P WHT :S-MICRO TO H1 BOARD CN1913
IC3201 TDA7265 AUDIO AMP
AUDIO AMP
-20V
20V
Q3201 2SC3311A MUTE
Q3202 2SC3311A MUTE
B-SS4919<GE.>-K..

H2 BOARD * MARK

Ref. No.	Location	28 INCH	32 INCH
CN1922	B-4	9P WHT	9P WHT-L
D1921	A-2	SLR-54VC12	SEL1222R-C, D
D1922	A-2	SLR-54VC12	SEL1222R-C, D
D1923	A-2	SLR-54VC12	SEL1222R-C, D

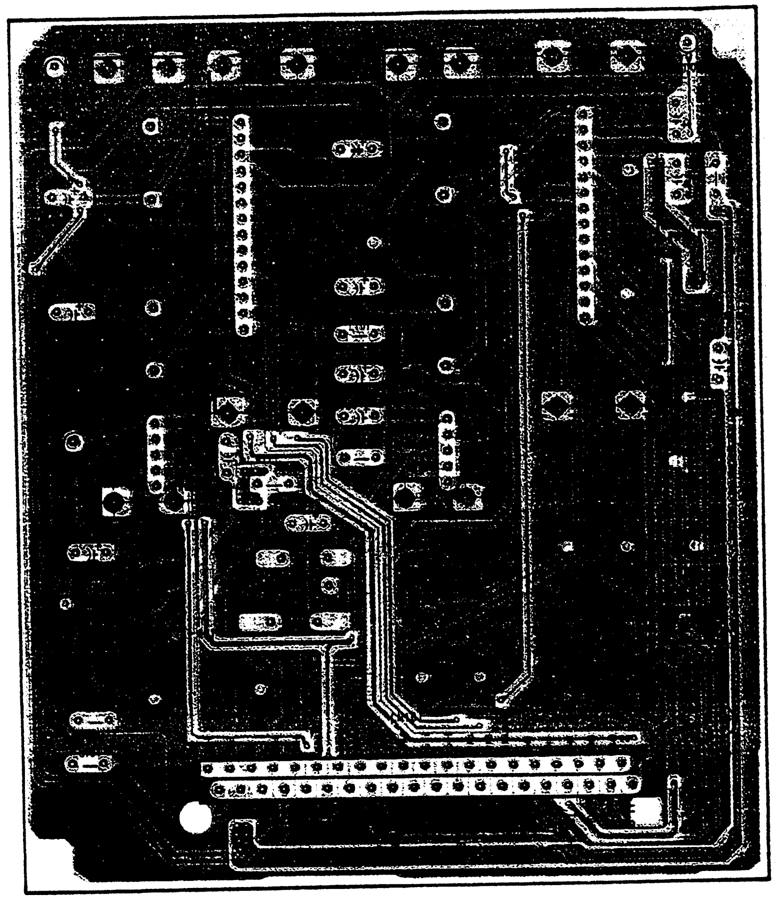
○:TO BE MOUNT
-: NOT MOUNT


H3
(SIRCS RECEIVE)
IC1931 SBX1790 SIRCS-RECEIVE
CN1931 3P WHT :S-MICRO TO H2 BOARD CN1923
B-SS4919<GE.>-H3.


VM (VM AMP)
CN1701 9P WHT :S-MICRO TO D1 BOARD CN2901
12V
135V
NECK AS
B-SS4919<GE.>-VM.

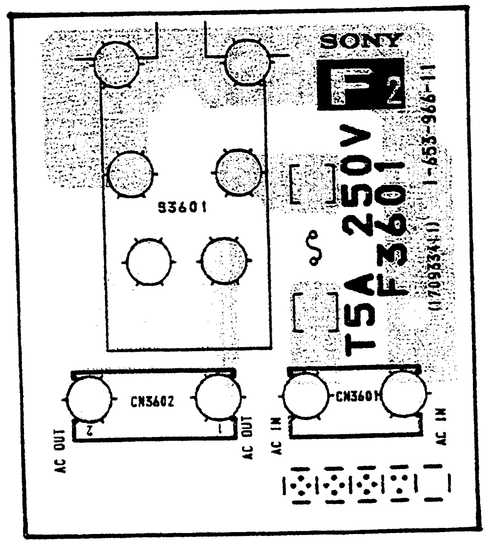
A2 [TUNER] **F1** [AC RECT] **F2** [AC IN] **H1** [AUDIO OUT, CONTROL SW] **H2** [CONTROL SW] **H3** [SIRCS RECEIVE] **H4** [AUDIO/VIDEO IN] **K** [AUDIO AMP] **VM** [VM AMP]

– A2 BOARD –

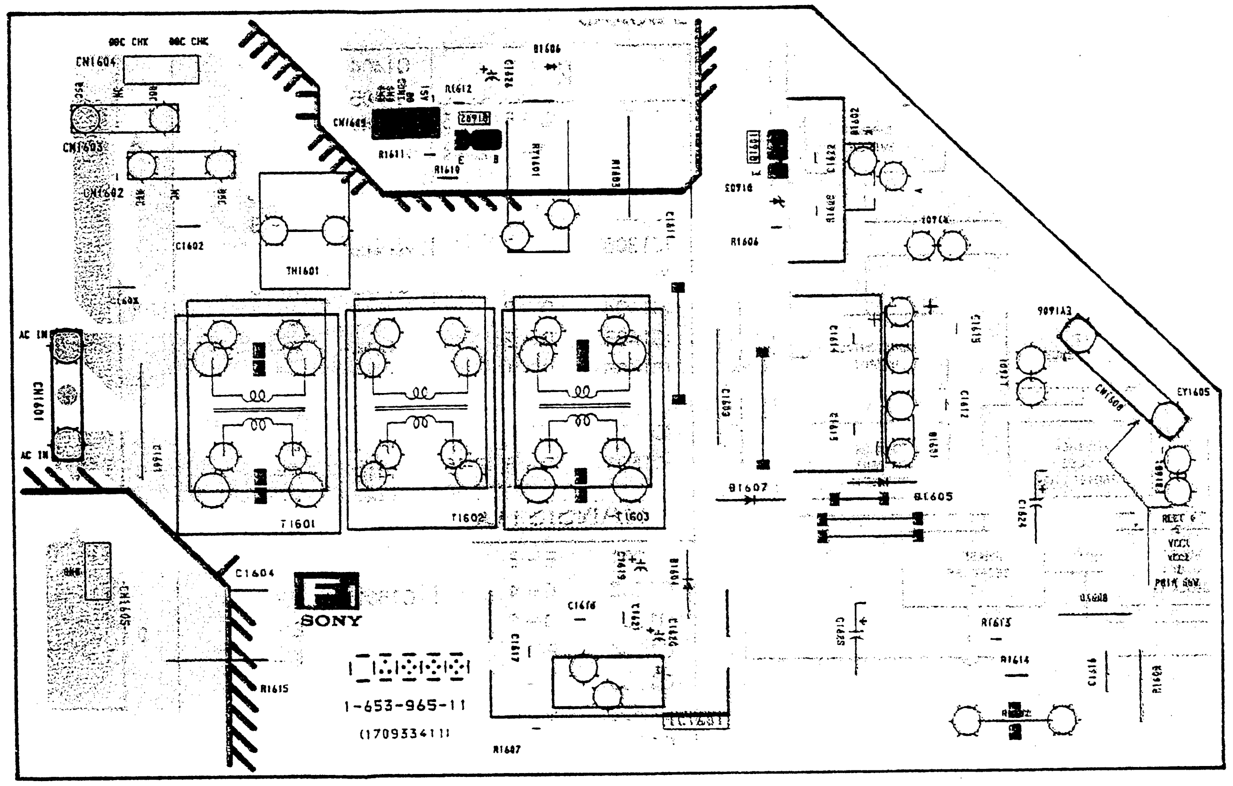


Note :
- ▨ : Pattern from the side which enables seeing.
- ■ : Pattern of the rear side.

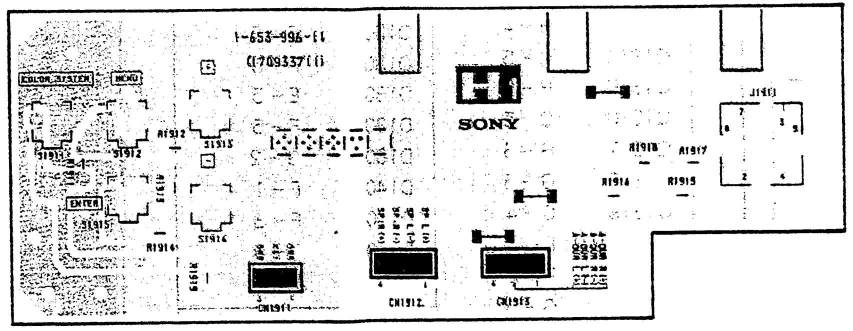
– F2 BOARD –


SONY
F2
S3601
T5A 250V
F3601
1-653-966-11
CN3602
CN3601
AC OUT
AC IN

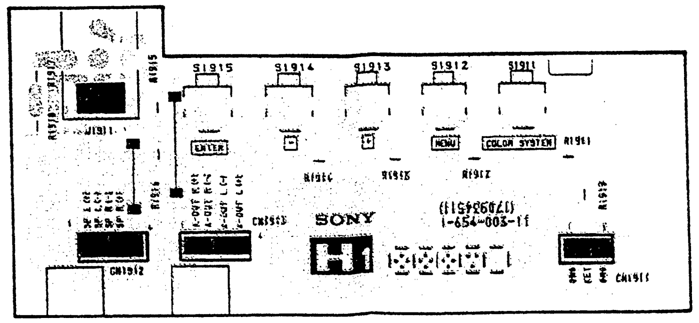
– F1 BOARD –


F1
SONY
1-653-965-11
(1709334111)
T1601
T1602
T1603
TH1601
CN1601
AC IN

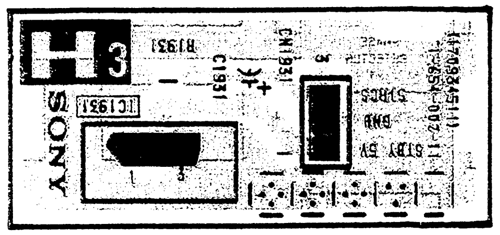
– H1 BOARD – (KV-W28MH11 / W28MN11)


1-653-996-11
H1
SONY

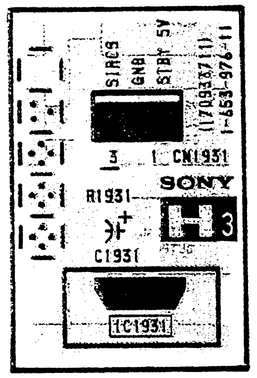
– H1 BOARD – (KV-W32MH11 / W32MN11)

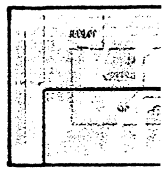

S1915
S1914
S1913
S1912
S1911
ENTER
MENU
COLOR SYSTEM
SONY
1-654-003-11
H1

– H3 BOARD – (KV-W28MH11 / W28MN11)

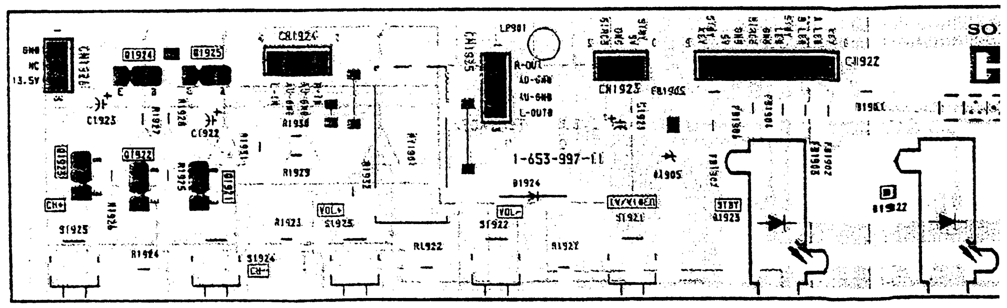

H3
SONY
R1931
C1931
IC1931

– H3 BOARD – (KV-W32MH11 / W32MN11)

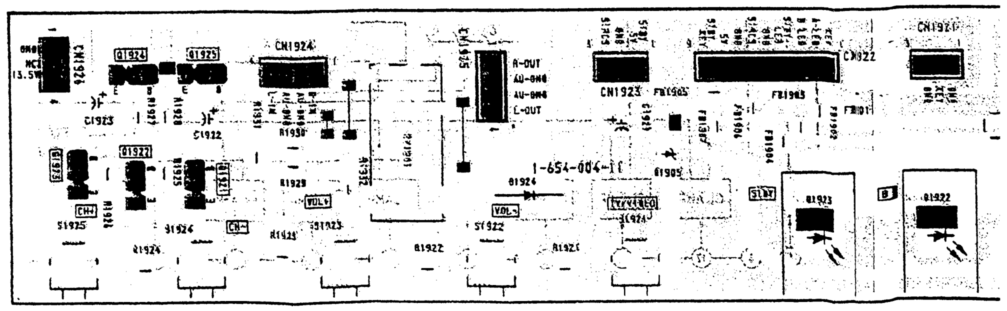

SIRCS
GND
STBY 5V
1-653-976-11
CN1931
SONY
R1931
C1931
IC1931
H3



– H2 BOARD – (KV-W28MH11 / W28MN11)

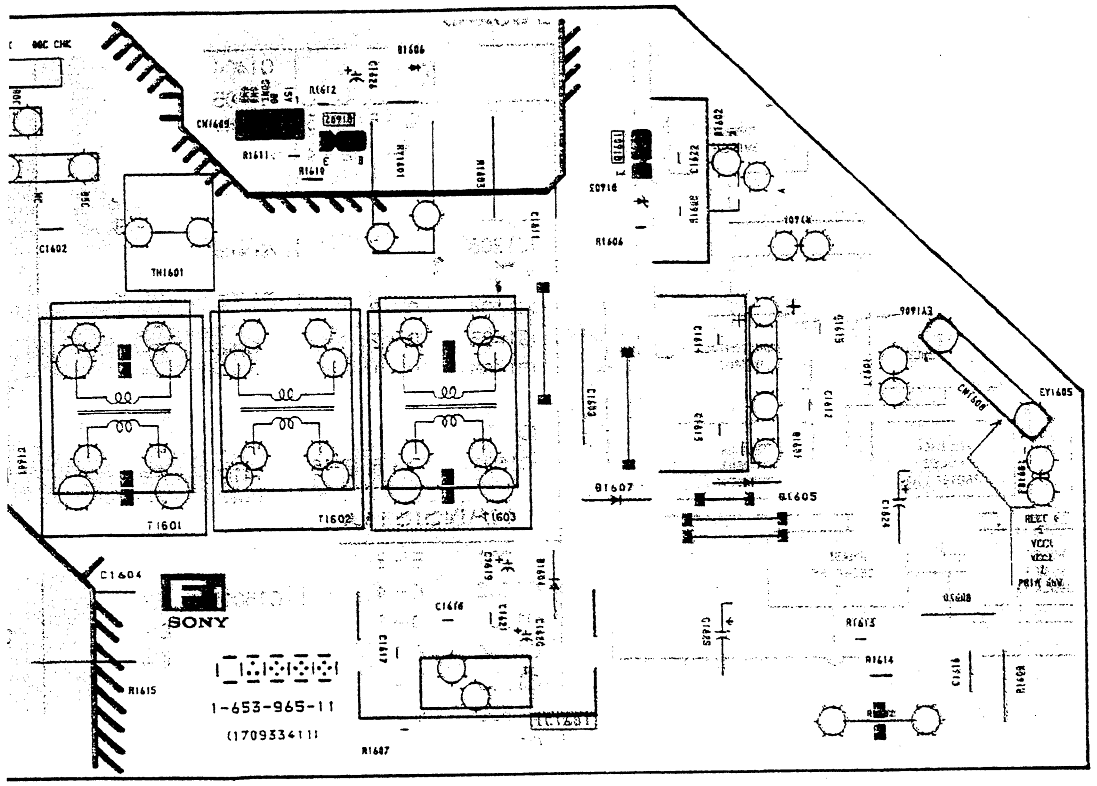

CN1924
CN1923
CN1922
1-653-997-11

– H2 BOARD – (KV-W32MH11 / W32MN11)

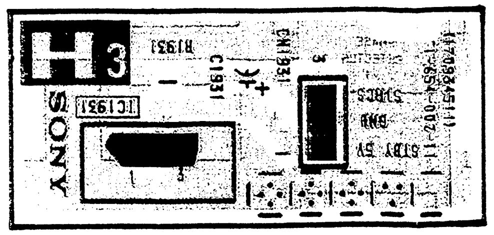

CN1924
CN1923
CN1922
1-654-004-11

2 [CONTROL SW] **H3** [SIRCS RECEIVE] **H4** [AUDIO/VIDEO IN] **K** [AUDIO AMP] **VM** [VM AMP]

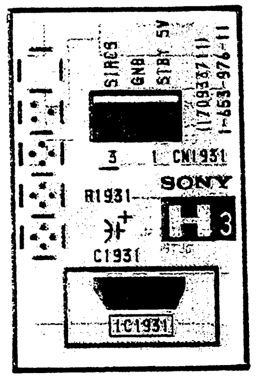
) -


F1
SONY
1-653-965-11
(170933411)
T1601
T1602
T1603
TH1601
C1604
R1615
R1607

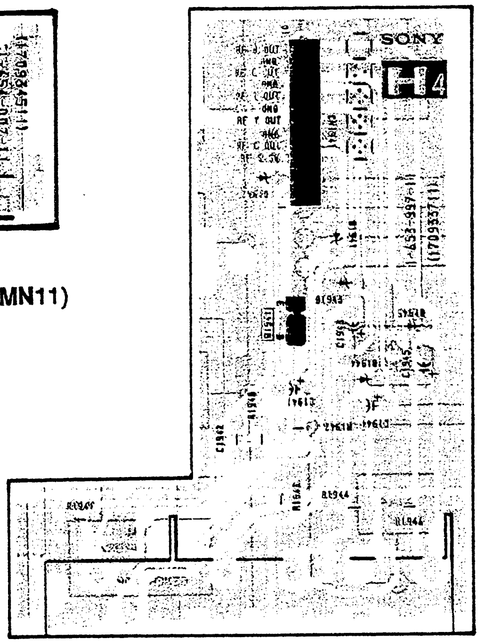
- H3 BOARD - (KV-W28MH11 / W28MN11)


H3
SONY
IC1931
R1931
C1931
CN1931

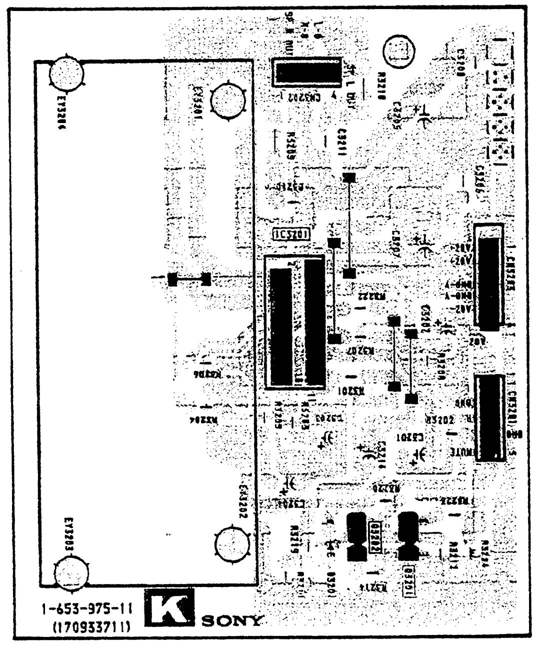
- H3 BOARD - (KV-W32MH11 / W32MN11)


SIRCS
GND
STBY 5V
1-653-976-11
CN1931
SONY
H3
R1931
C1931
IC1931

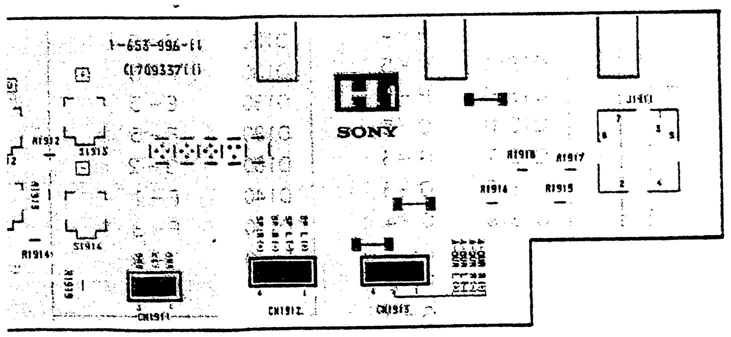
- H4 BOARD -



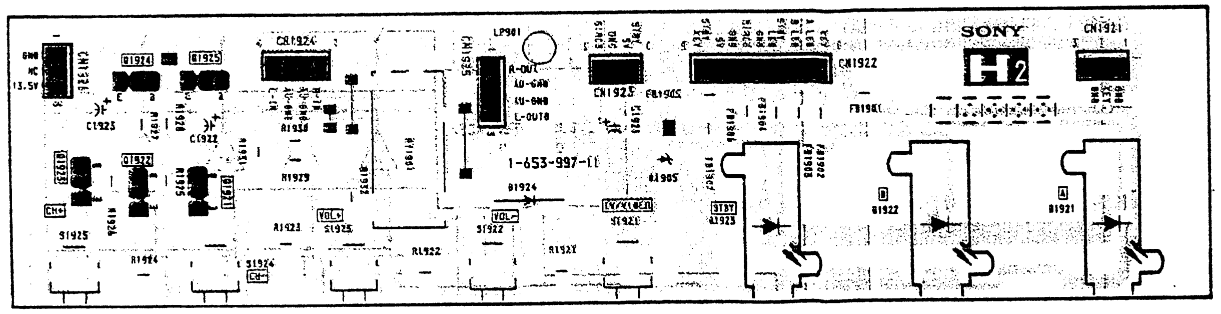
- K BOARD -


1-653-975-11
(170933711)
K
SONY

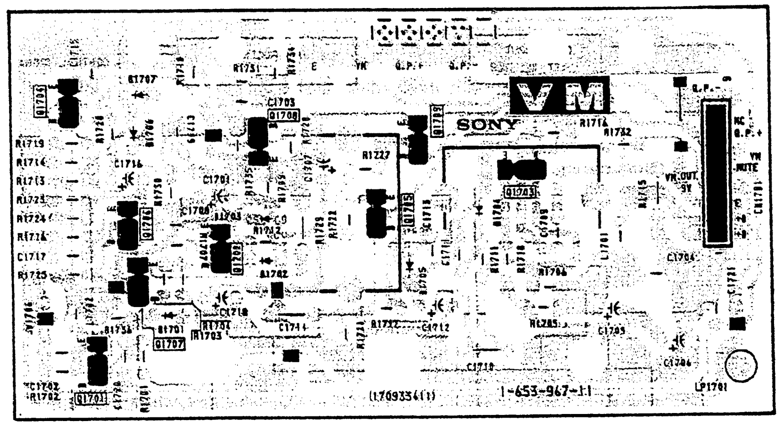
RD - (KV-W28MH11 / W28MN11)


1-653-996-11
(170933711)
H1
SONY
CN1911
CN1912
CN1913

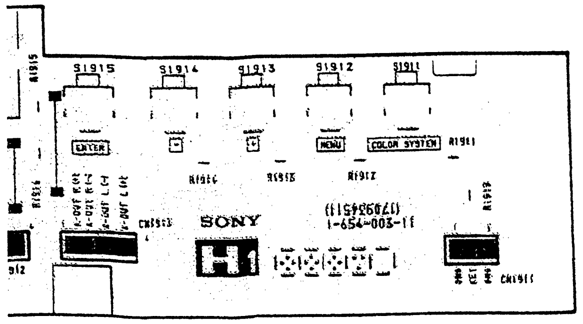
- H2 BOARD - (KV-W28MH11 / W28MN11)


CN1924
SONY
H2
CN1921
CN1922
CN1923
1-653-997-11
R-OUT
L-OUT
D1921
D1922
D1923

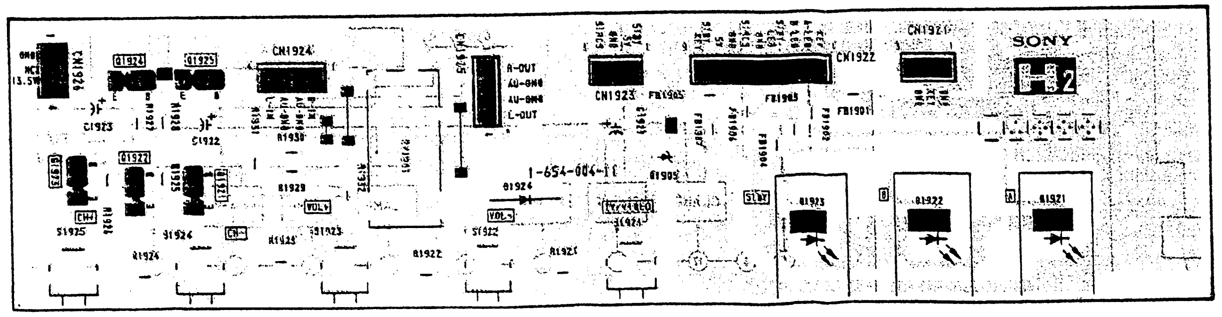
- VM BOARD -


VM
SONY
(170933411)
1-653-967-11

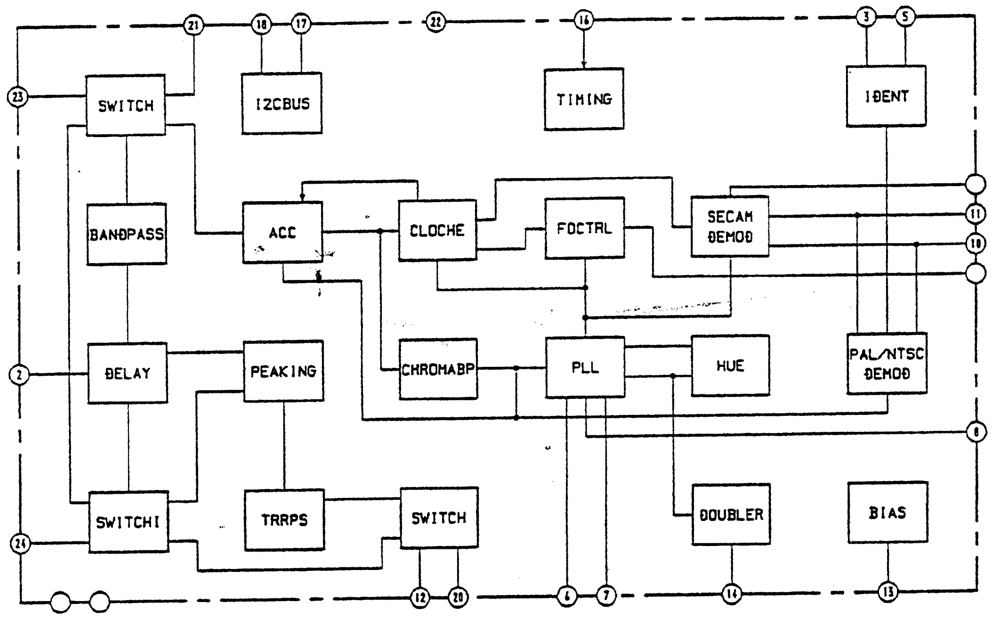
RD - (KV-W32MH11 / W32MN11)


S1915
S1914
S1913
S1912
S1911
SONY
H1
1-654-003-11
CN1911

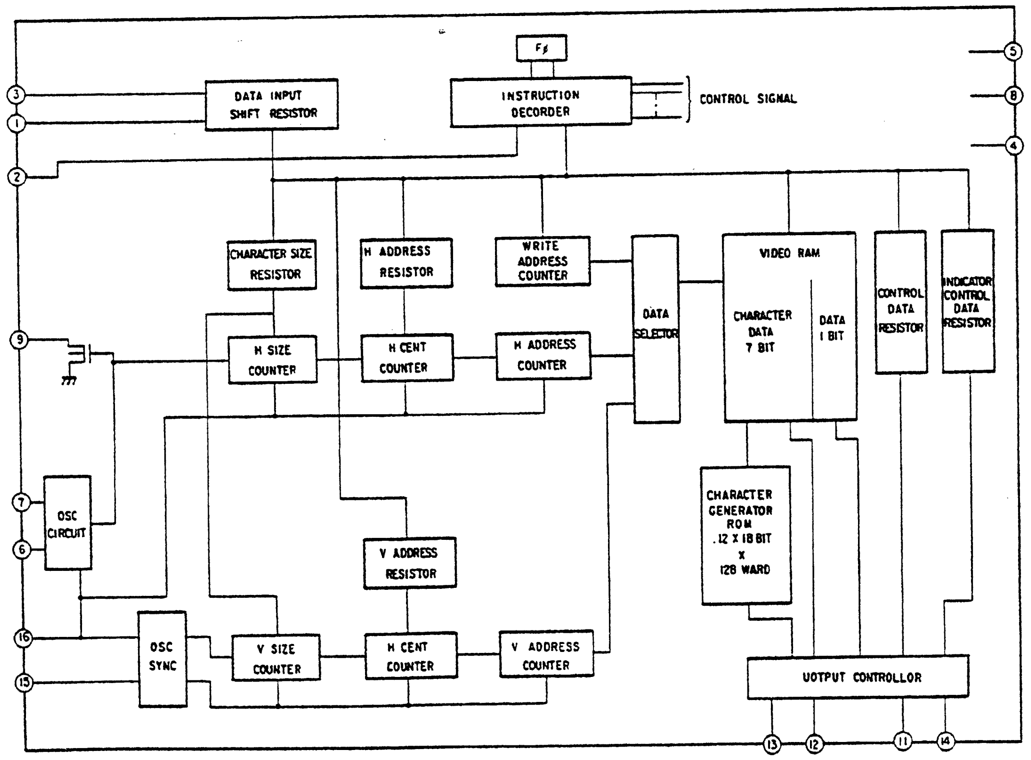
- H2 BOARD - (KV-W32MH11 / W32MN11)


CN1924
CN1921
CN1922
CN1923
SONY
H2
R-OUT
L-OUT
1-654-004-11
D1923
D1922
D1921

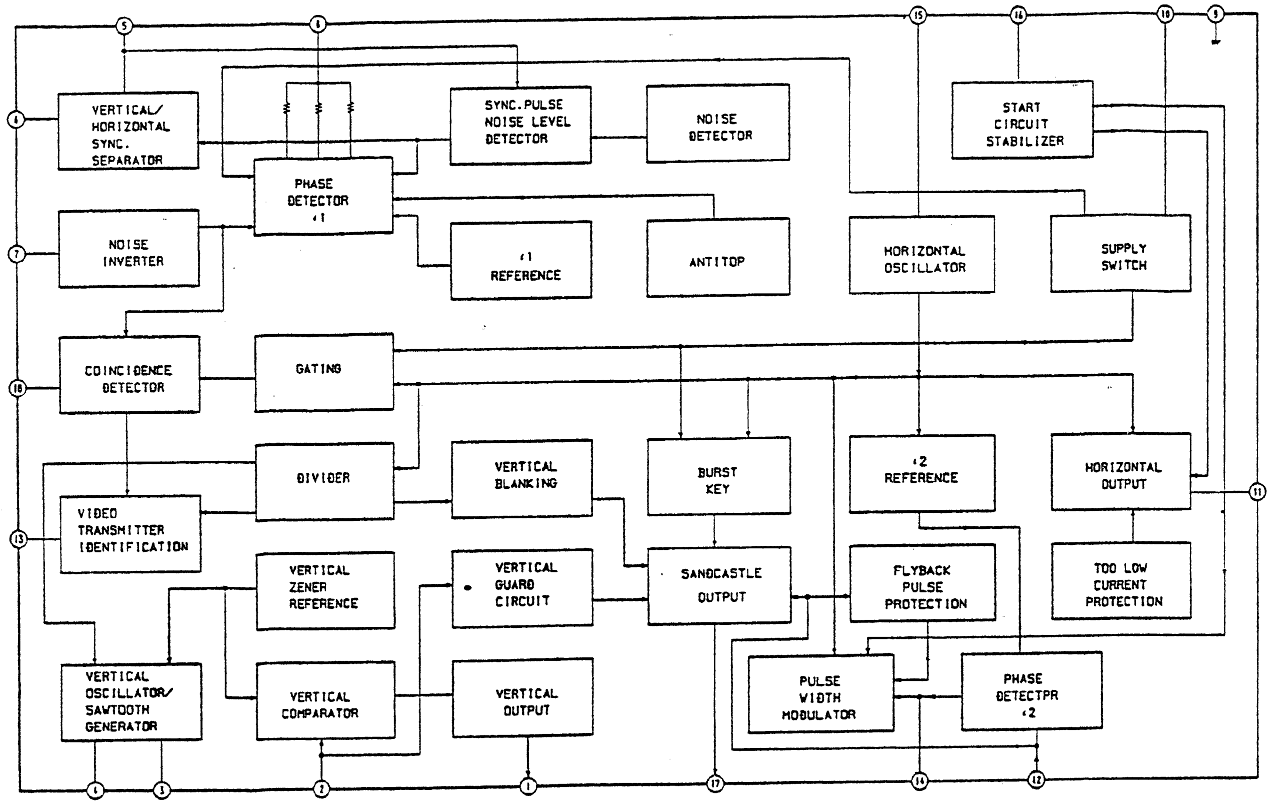
B BOARD IC1302 TDA9145/N2B


SWITCH
I2CBUS
TIMING
IDENT
BANDPASS
ACC
CLOCHE
FOCTRL
SECAM DEMOD
DELAY
PEAKING
CHROMABP
PLL
HUE
PAL/NTSC DEMOD
SWITCHI
TRRPS
SWITCH
DOUBLER
BIAS
21
18
17
22
16
3
5
23
11
10
2
8
24
12
20
6
7
14
13

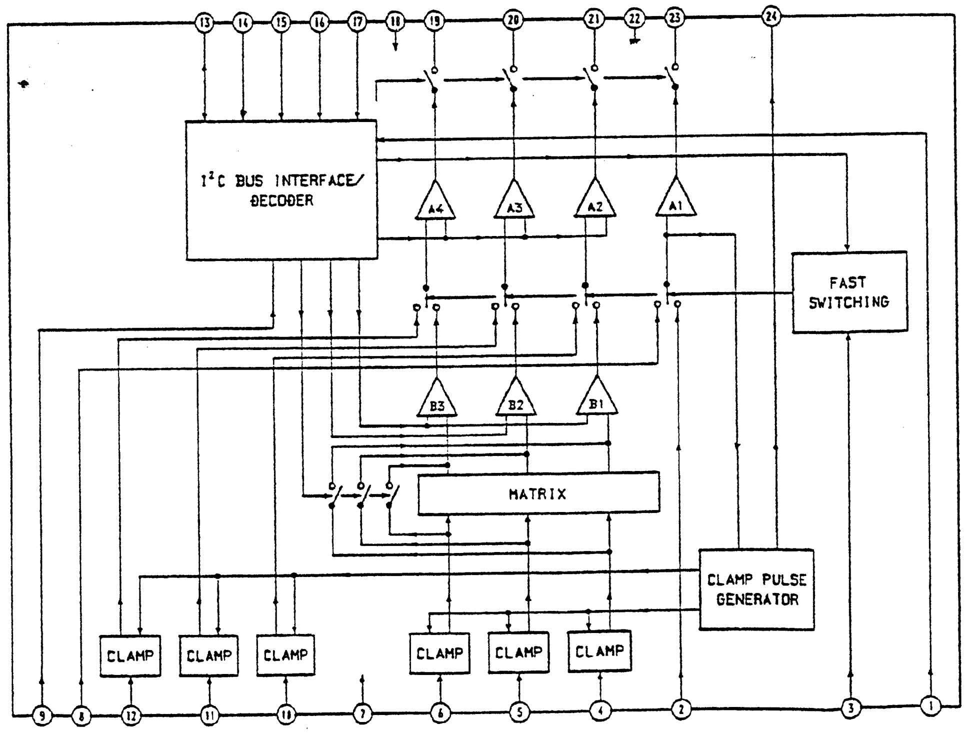
B BOARD IC1305 μPD6456


Fϕ
DATA INPUT SHIFT RESISTOR
INSTRUCTION DECORDER
CONTROL SIGNAL
CHARACTER SIZE RESISTOR
H ADDRESS RESISTOR
WRITE ADDRESS COUNTER
DATA SELECTOR
VIDEO RAM
CHARACTER DATA 7 BIT
DATA 1 BIT
CONTROL DATA RESISTOR
INDICATOR CONTROL DATA RESISTOR
H SIZE COUNTER
H CENT COUNTER
H ADDRESS COUNTER
CHARACTER GENERATOR ROM .12 X 18 BIT x 128 WARD
OSC CIRCUIT
V ADDRESS RESISTOR
OSC SYNC
V SIZE COUNTER
H CENT COUNTER
V ADDRESS COUNTER
UOTPUT CONTROLLOR
3
1
2
9
7
6
16
15
5
8
4
13
12
11
14

B BOARD IC1501 TDA2579B


VERTICAL/ HORIZONTAL SYNC. SEPARATOR
PHASE DETECTOR ϕ1
SYNC.PULSE NOISE LEVEL DETECTOR
NOISE DETECTOR
START CIRCUIT STABILIZER
NOISE INVERTER
ϕ1 REFERENCE
ANTITOP
HORIZONTAL OSCILLATOR
SUPPLY SWITCH
COINCIDENCE DETECTOR
GATING
DIVIDER
VERTICAL BLANKING
BURST KEY
ϕ2 REFERENCE
HORIZONTAL OUTPUT
VIDEO TRANSMITTER IDENTIFICATION
VERTICAL ZENER REFERENCE
VERTICAL GUARD CIRCUIT
SANDCASTLE OUTPUT
FLYBACK PULSE PROTECTION
TOO LOW CURRENT PROTECTION
VERTICAL OSCILLATOR/ SAWTOOTH GENERATOR
VERTICAL COMPARATOR
VERTICAL OUTPUT
PULSE WIDTH MODULATOR
PHASE DETECTPR ϕ2
5
8
15
16
10
9
6
7
18
13
11
4
3
2
1
17
14
12

B BOARD IC1401 TDA8443B


I²C BUS INTERFACE/ DECODER
A4
A3
A2
A1
FAST SWITCHING
B3
B2
B1
MATRIX
CLAMP PULSE GENERATOR
CLAMP
CLAMP
CLAMP
CLAMP
CLAMP
CLAMP
13
14
15
16
17
18
19
20
21
22
23
24
9
8
12
11
10
7
6
5
4
2
3
1

B BOARD

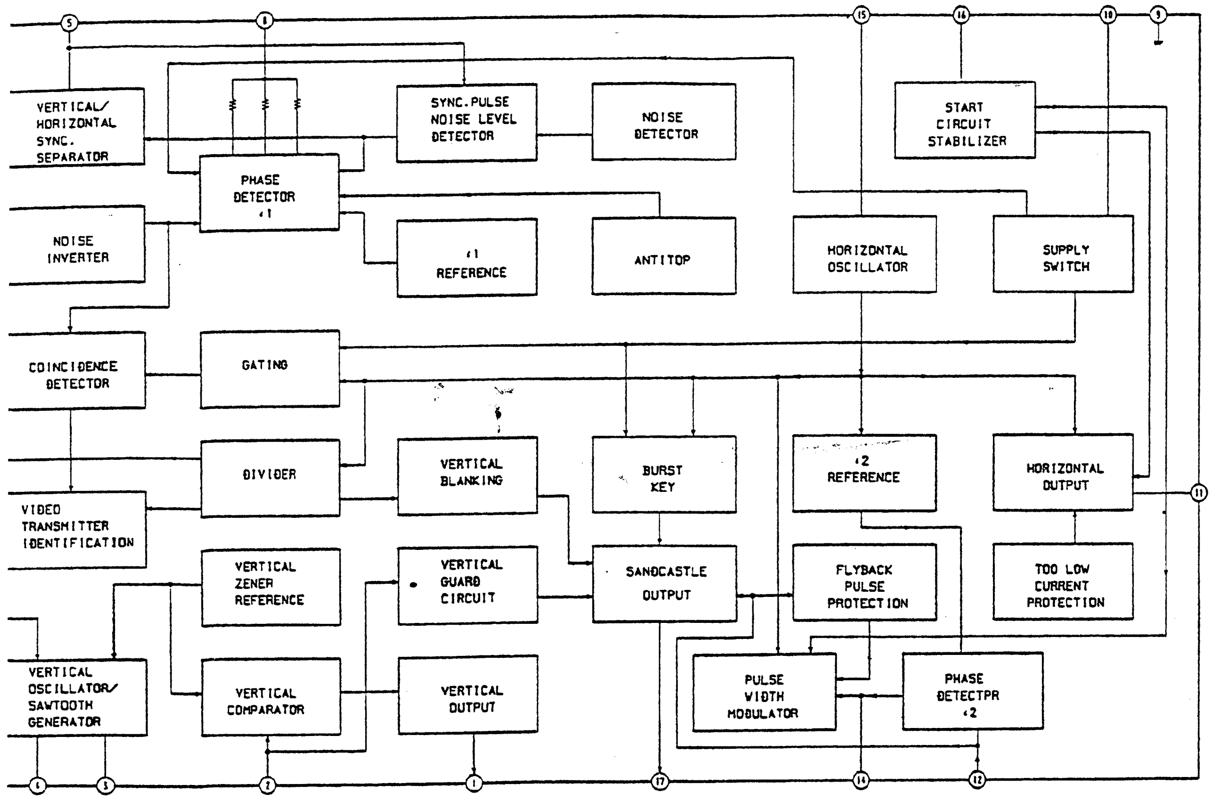
IC	
IC1301	C－5, F－5
IC1302	D－4, E－4
IC1303	B－4
IC1304	B－5
IC1305	B－2
IC1401	B－3, G－3
IC1404	D－2
IC1405	D－2
IC1406	D－1
IC1407	B－2, G－2
IC1408	B－1, G－1
IC1501	D－6, E－6

TRANSISTOR	
Q1301	E－3
Q1302	E－4
Q1303	D－3
Q1304	E－3
Q1305	C－4
Q1306	D－5
Q1307	F－5
Q1308	C－5
Q1309	G－6
Q1310	G－5
Q1311	G－5
Q1312	H－4
Q1314	H－5
Q1315	H－5
Q1316	G－5
Q1317	G－6
Q1318	G－5
Q1319	C－4
Q1320	E－4
Q1323	F－2
Q1324	G－5
Q1325	G－5
Q1401	F－3
Q1402	C－3
Q1403	G－3
Q1404	G－3
Q1405	F－3
Q1407	E－3
Q1408	D－3
Q1409	D－3
Q1410	F－3
Q1411	G－2
Q1412	F－3
Q1413	G－2
Q1414	F－1
Q1415	C－1
Q1416	C－1
Q1417	E－1
Q1418	F－1
Q1421	F－3
Q1422	C－2
Q1423	C－1
Q1501	F－6
Q1502	C－5
Q1505	E－6
Q1506	E－6
Q1507	F－5
Q1508	E－6

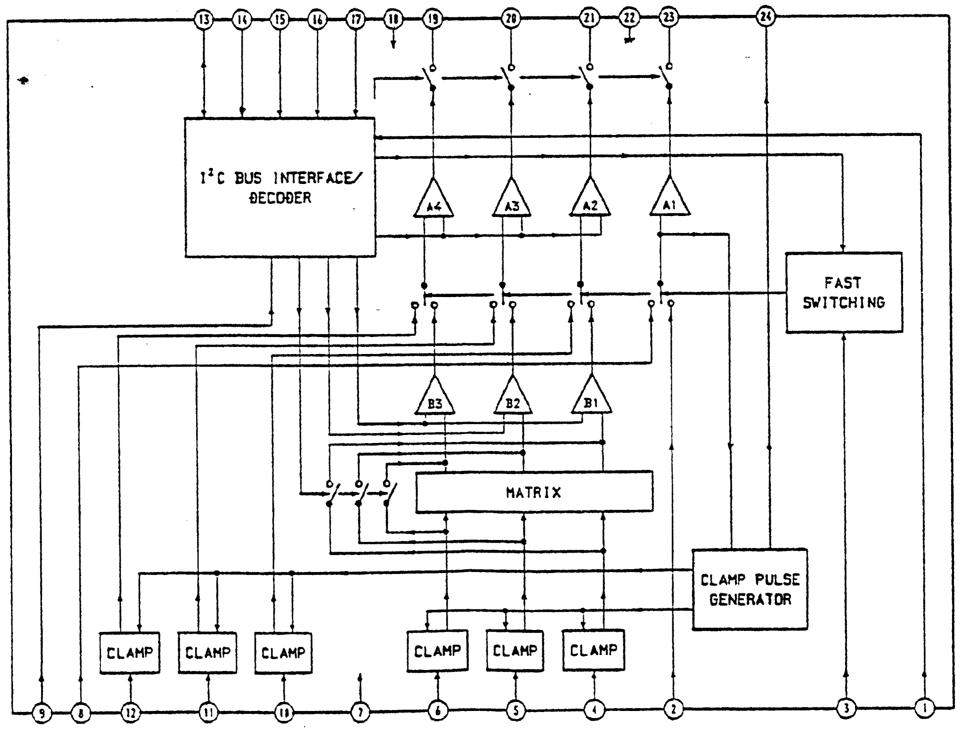
DIODE	
D1301	B－4
D1302	E－4
D1303	E－5
D1304	F－5
D1305	E－5
D1307	F－5
D1309	G－2
D1401	F－1
D1402	F－3
D1501	F－4
D1502	F－4

VARIABLE RESISTOR	
RV1501	D－5

OARD IC1501 TDA2579B


VERTICAL/HORIZONTAL SYNC. SEPARATOR
PHASE DETECTOR φ1
SYNC. PULSE NOISE LEVEL DETECTOR
NOISE DETECTOR
START CIRCUIT STABILIZER
NOISE INVERTER
φ1 REFERENCE
ANTITOP
HORIZONTAL OSCILLATOR
SUPPLY SWITCH
COINCIDENCE DETECTOR
GATING
DIVIDER
VERTICAL BLANKING
BURST KEY
φ2 REFERENCE
HORIZONTAL OUTPUT
VIDEO TRANSMITTER IDENTIFICATION
VERTICAL ZENER REFERENCE
VERTICAL GUARD CIRCUIT
SANDCASTLE OUTPUT
FLYBACK PULSE PROTECTION
TOO LOW CURRENT PROTECTION
VERTICAL OSCILLATOR/SAWTOOTH GENERATOR
VERTICAL COMPARATOR
VERTICAL OUTPUT
PULSE WIDTH MODULATOR
PHASE DETECTPR φ2
5
6
15
14
10
9
11
4
3
2
1
17
13
12

B BOARD IC1401 TDA8443B

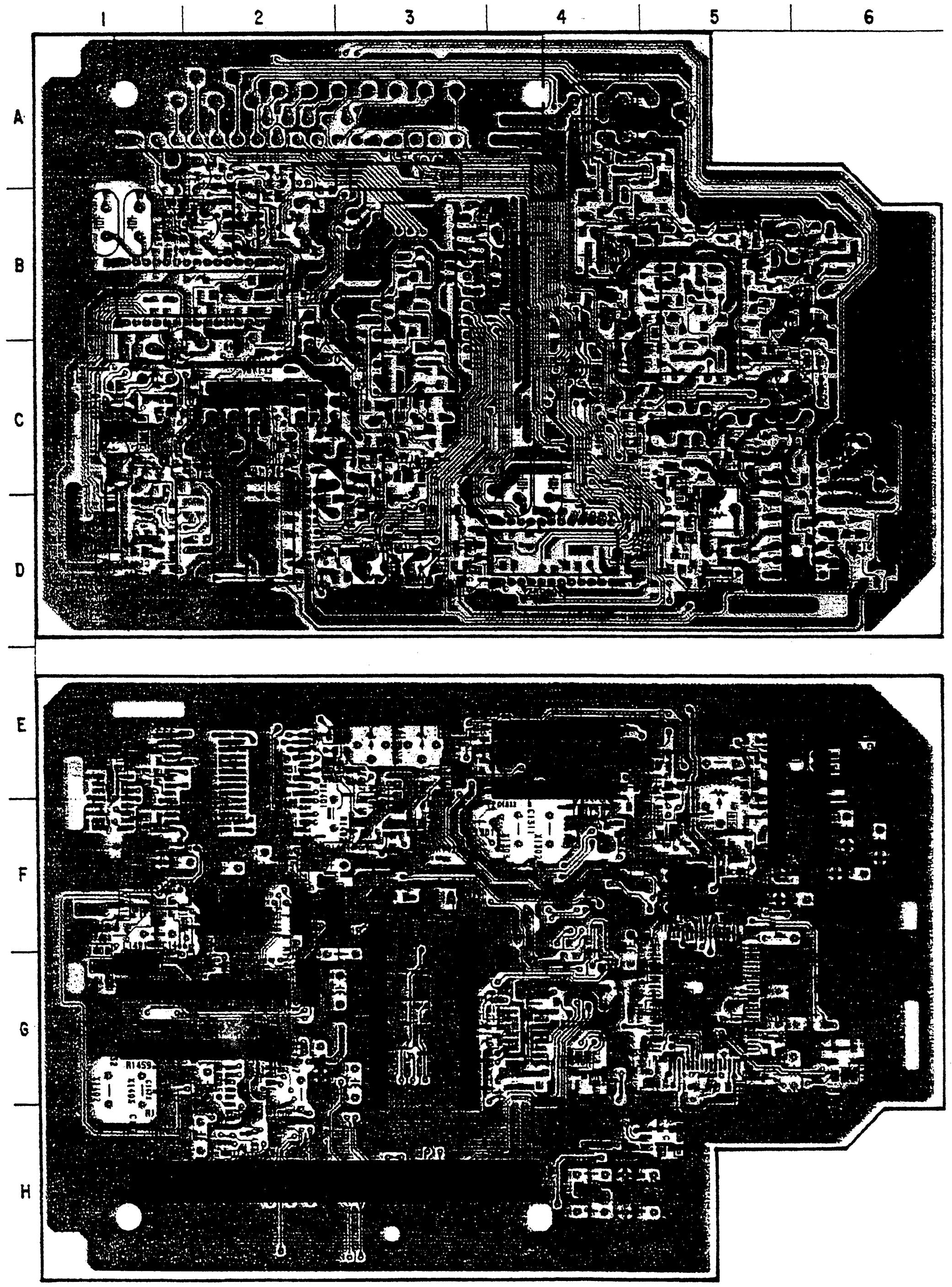

13
14
15
16
17
18
19
20
21
22
23
24
I²C BUS INTERFACE/DECODER
A4
A3
A2
A1
FAST SWITCHING
B3
B2
B1
MATRIX
CLAMP PULSE GENERATOR
CLAMP
CLAMP
CLAMP
CLAMP
CLAMP
CLAMP
9
8
12
11
10
7
6
5
4
2
3
1

B CHROMA DECORDER, 1H DELAY, P IN P, 3D-Y/C-SEP, R. G. B SW

B BOARD

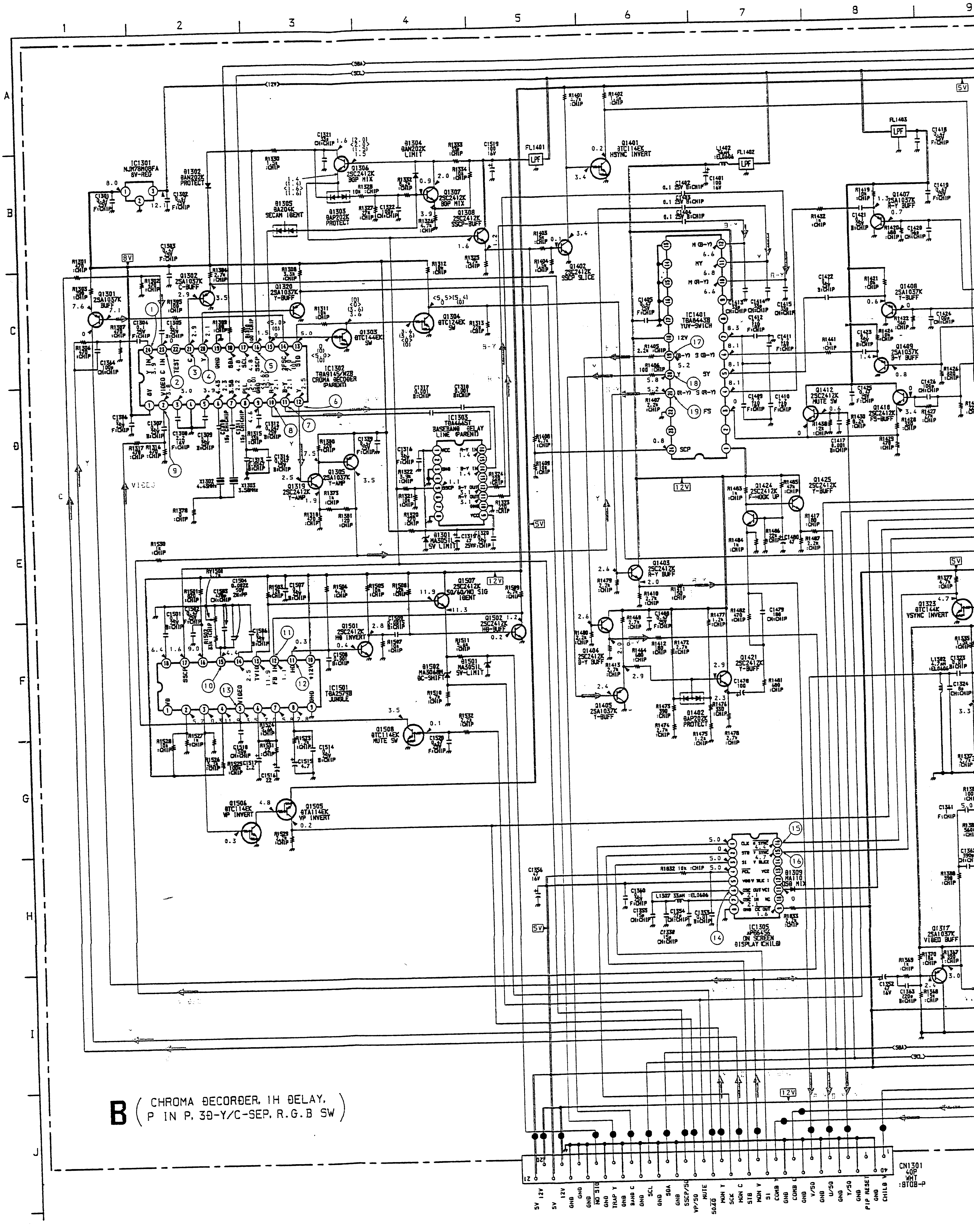
IC	
IC1301	C – 5, F – 5
IC1302	D – 4, E – 4
IC1303	B – 4
IC1304	B – 5
IC1305	B – 2
IC1401	B – 3, G – 3
IC1404	D – 2
IC1405	D – 2
IC1406	D – 1
IC1407	B – 2, G – 2
IC1408	B – 1, G – 1
IC1501	D – 6, E – 6
TRANSISTOR	
Q1301	E – 3
Q1302	E – 4
Q1303	D – 3
Q1304	E – 3
Q1305	C – 4
Q1306	D – 5
Q1307	F – 5
Q1308	C – 5
Q1309	G – 6
Q1310	G – 5
Q1311	G – 5
Q1312	H – 4
Q1314	H – 5
Q1315	H – 5
Q1316	G – 5
Q1317	G – 6
Q1318	G – 5
Q1319	C – 4
Q1320	E – 4
Q1323	F – 2
Q1324	G – 5
Q1325	G – 5
Q1401	F – 3
Q1402	C – 3
Q1403	G – 3
Q1404	G – 3
Q1405	F – 3
Q1407	E – 3
Q1408	D – 3
Q1409	D – 3
Q1410	F – 3
Q1411	G – 2
Q1412	F – 3
Q1413	G – 2
Q1414	F – 1
Q1415	C – 1
Q1416	C – 1
Q1417	E – 1
Q1418	F – 1
Q1421	F – 3
Q1422	C – 2
Q1423	C – 1
Q1501	F – 6
Q1502	C – 5
Q1505	E – 6
Q1506	E – 6
Q1507	F – 5
Q1508	E – 6
DIODE	
D1301	B – 4
D1302	E – 4
D1303	E – 5
D1304	F – 5
D1305	E – 5
D1307	F – 5
D1309	G – 2
D1401	F – 1
D1402	F – 3
D1501	F – 4
D1502	F – 4
VARIABLE RESISTOR	
RV1501	D – 5

– B BOARD –

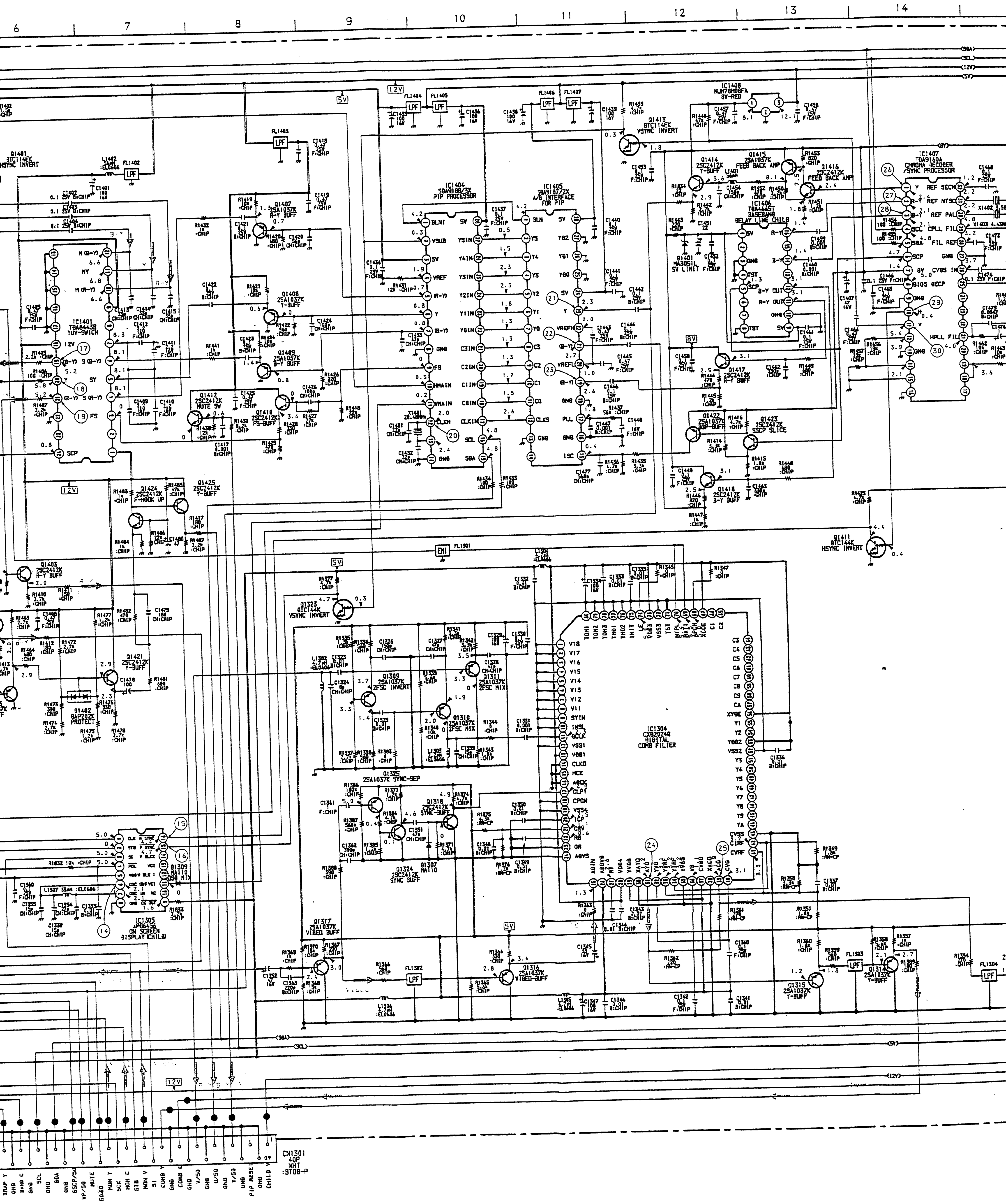

1
2
3
4
5
6
A
B
C
D
E
F
G
H

Note :

- : Pattern from the side which enables seeing.
- ■ : Pattern of the rear side.


1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
G
H
I
J
IC1301 NJM78M08FA 8V-REG
Q1301 2SA1037K BUFF
Q1302 2SA1037K C-BUFF
Q1320 2SA1037K Y-BUFF
Q1306 2SC2412K BGP MIX
Q1304 DAN202K LIMIT
Q1307 2SC2412K BGP MIX
Q1308 2SC2412K SSCP-BUFF
D1302 DAN202K PROTECT
D1305 DA204K SECAM IDENT
D1303 DAP202K PROTECT
Q1304 DTC124EK SW
Q1303 DTC144EK SW
IC1302 TDA9145/N2B CHROMA DECODER (PARENT)
IC1303 TDA4665T BASEBAND DELAY LINE (PARENT)
Q1305 2SA1037K Y-AMP
Q1319 2SC2412K Y-AMP
X1302 4.43MHz
X1303 3.58MHz
D1301 MA3051L 5V LIMIT
FL1401 LPF
FL1402 LPF
FL1403 LPF
Q1401 DTC114EK HSYNC INVERT
Q1402 2SC2412K SSCP SLICE
IC1401 TDA8443B YUV-SWICH
Q1407 2SA1037K R-Y BUFF
Q1408 2SA1037K Y-BUFF
Q1409 2SA1037K B-Y BUFF
Q1412 2SC2412K MUTE SW
Q1410 2SC2412K FS-BUFF
Q1424 2SC2412K F-HOOK UP
Q1425 2SC2412K Y-BUFF
Q1403 2SC2412K R-Y BUFF
Q1404 2SC2412K B-Y BUFF
Q1405 2SA1037K Y-BUFF
Q1421 2SC2412K Y-BUFF
D1402 DAP202K PROTECT
Q1507 2SC2412K 50/60/NO SIG IDENT
Q1501 2SC2412K HD INVERT
Q1502 2SC2412K HD-BUFF
D1501 MA3051L 5V-LIMIT
D1502 MA3068M DC-SHIFT
IC1501 TDA2579B JUNGLE
Q1508 DTC114EK MUTE SW
Q1506 DTC114EK VP INVERT
Q1505 DTA114EK VP INVERT
IC1305 AP6465G ON SCREEN DISPLAY CHILD
D1309 MA110 OSD MIX
Q1323 DTC144EK VSYNC INVERT
Q1317 2SA1037K VIDEO BUFF
L1307 33μH :EL0606
CN1301 40P WHT :BTOB-P
5V
12V
8V
SDA
SCL
VIDEO
Y
C
5V 12V 5V 12V GND GND GND NO SIG GND TRAP Y GND BAND C GND SCL GND SDA GND SSCP/SG VP/SG MUTE SDAO MON Y SCK MON C STB MON V SI COMB Y GND COMB C GND V/SG GND U/SG GND Y/SG GND PIP RESET GND CHILD V

B (CHROMA DECORDER, 1H DELAY, P IN P, 3D-Y/C-SEP, R.G.B SW)


6
7
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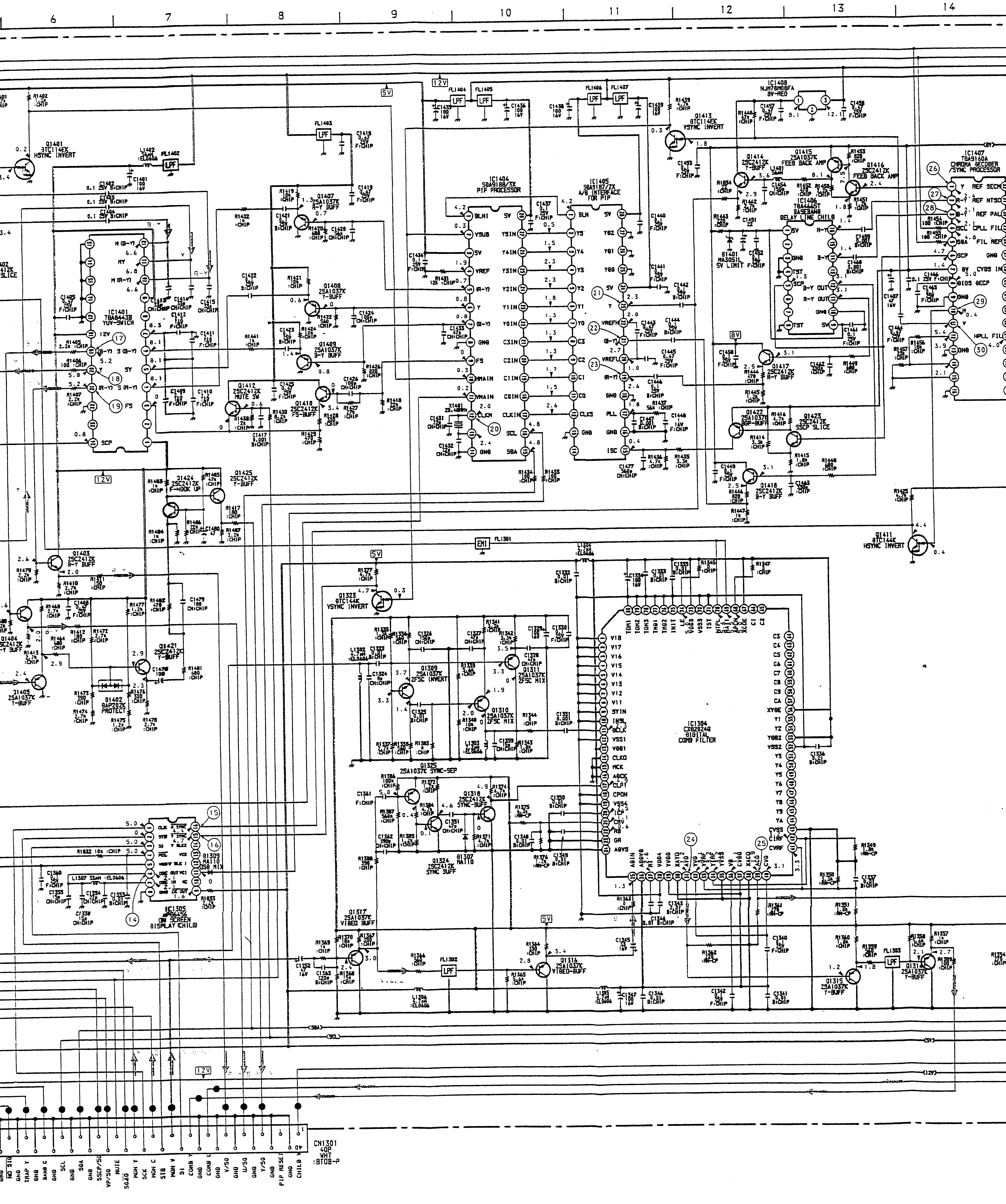
11
12
13
14
IC1401 TDA8443B YUV-SWICH
Q1401 DTC114EK HSYNC INVERT
Q1407 2SA1037K R-Y BUFF
Q1408 2SC2412K Y-BUFF
Q1409 2SA1037K B-Y BUFF
Q1412 2SC2412K MUTE SW
Q1410 2SC2412K FS-BUFF
Q1424 2SC2412K F-HOOK UP
Q1425 2SC2412K Y-BUFF
Q1403 2SC2412K R-Y BUFF
Q1421 2SC2412K Y-BUFF
D1402 DAP202K PROTECT
IC1404 SDA9188/3X PIP PROCESSOR
IC1405 SDA9187/2X A/D INTERFACE FOR PIP
IC1408 NJM78M08FA 8V-REG
Q1413 DTC114EK VSYNC INVERT
Q1414 2SC2412K Y-BUFF
Q1415 2SA1037K FEED BACK AMP
Q1416 2SC2412K FEED BACK AMP
IC1406 TDA4665T BASEBAND DELAY LINE CHILD
D1401 MA3051L 5V LIMIT
Q1417 2SC2412K R-Y BUFF
Q1422 2SA1037K BGP-BUFF
Q1423 2SC2412K SSCP SLICE
Q1418 2SC2412K B-Y BUFF
IC1407 TDA9160A CHROMA DECODER /SYNC PROCESSOR
Q1411 DTC144K HSYNC INVERT
Q1323 DTC144K VSYNC INVERT
Q1309 2SA1037K 2FSC INVERT
Q1311 2SA1037K 2FSC MIX
Q1310 2SA1037K 2FSC MIX
Q1325 2SA1037K SYNC-SEP
Q1318 2SC2412K SYNC-BUFF
Q1324 2SC2412K SYNC BUFF
D1307 MA110
IC1304 CXD2024Q DIGITAL COMB FILTER
IC1305 uPD6455 ON SCREEN DISPLAY (CHILD)
D1309 MA110 OSD MIX
Q1317 2SA1037K VIDEO BUFF
Q1316 2SA1037K VIDEO-BUFF
Q1315 2SA1037K Y-BUFF
Q1314 2SA1037K Y-BUFF
FL1301 EMI
LPF
12V
5V
8V
(SDA)
(SCL)
(12V)
(5V)
CN1301 40P WHT :DTOB-P
TRAP Y
GND
BAND C
GND
SCL
GND
SDA
GND
SSCP/50
VP/50
MUTE
50/60
MON Y
SCK
MON C
STB
MON V
SI
COMB Y
GND
COMB C
V/50
GND
U/50
GND
Y/50
GND
PIP RESET
GND
CHILD V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7
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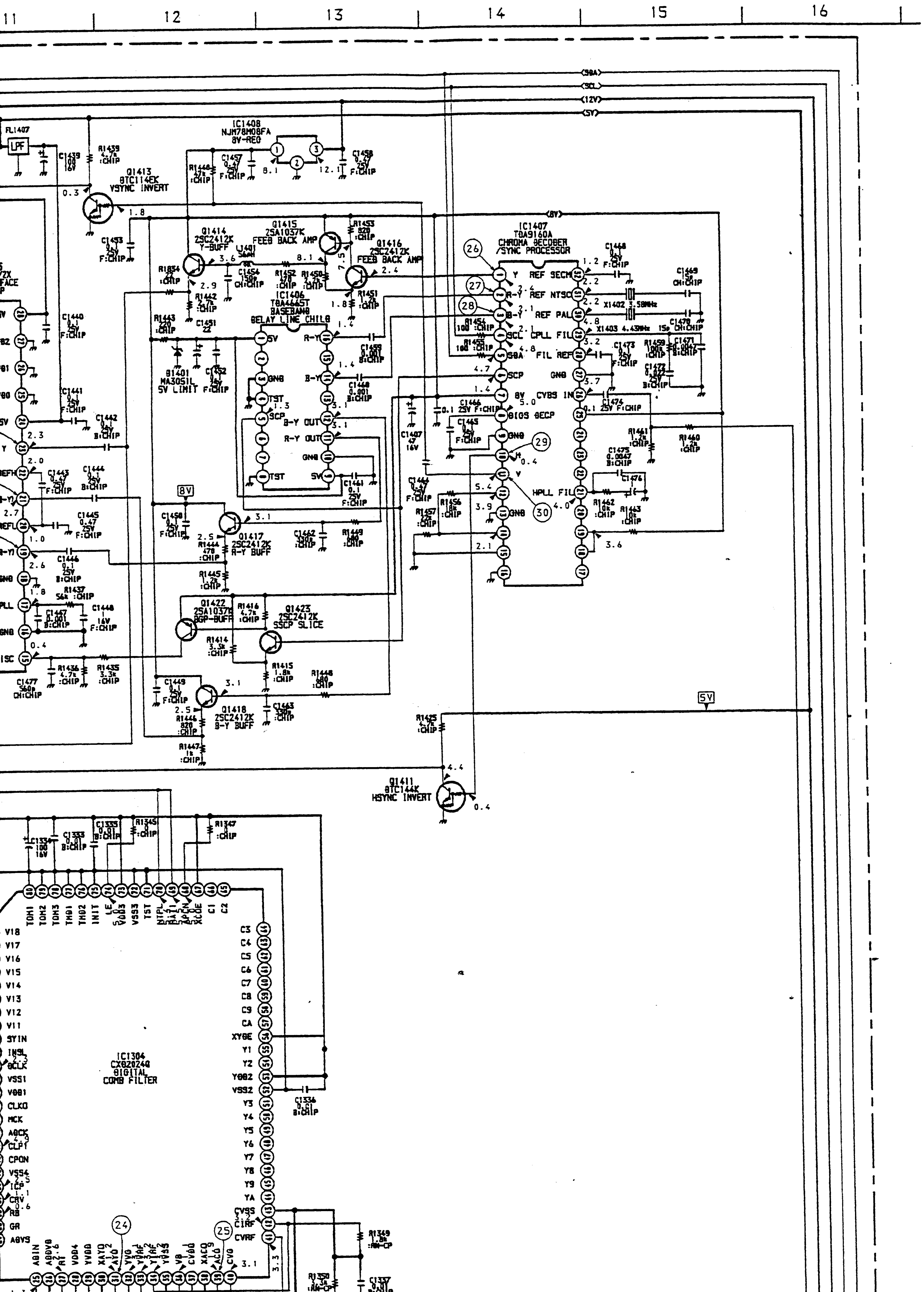
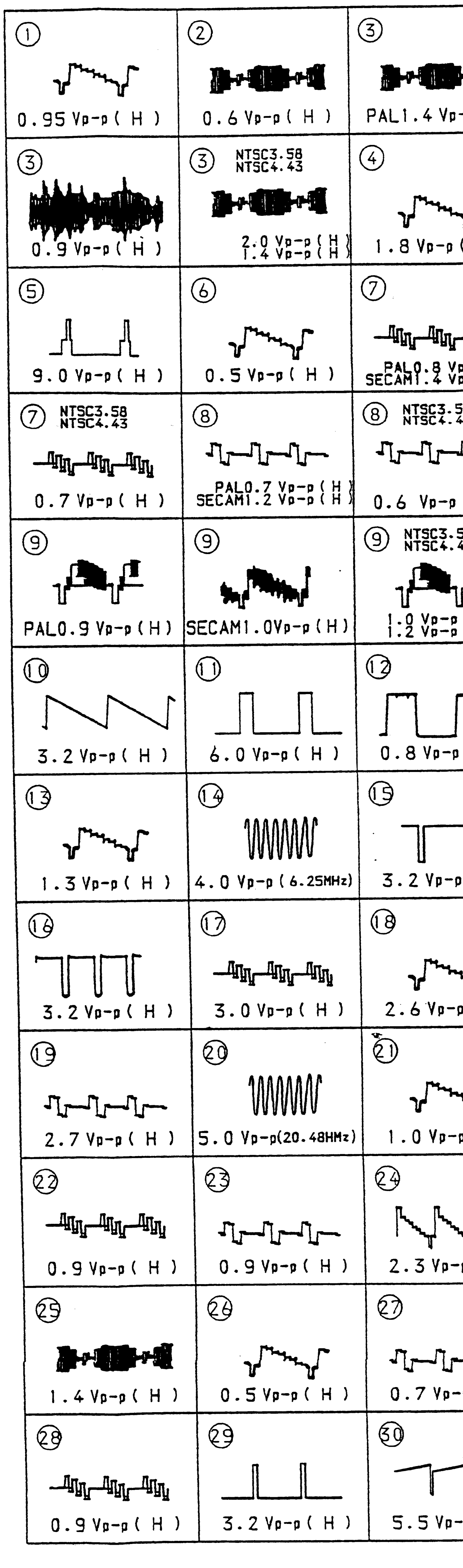
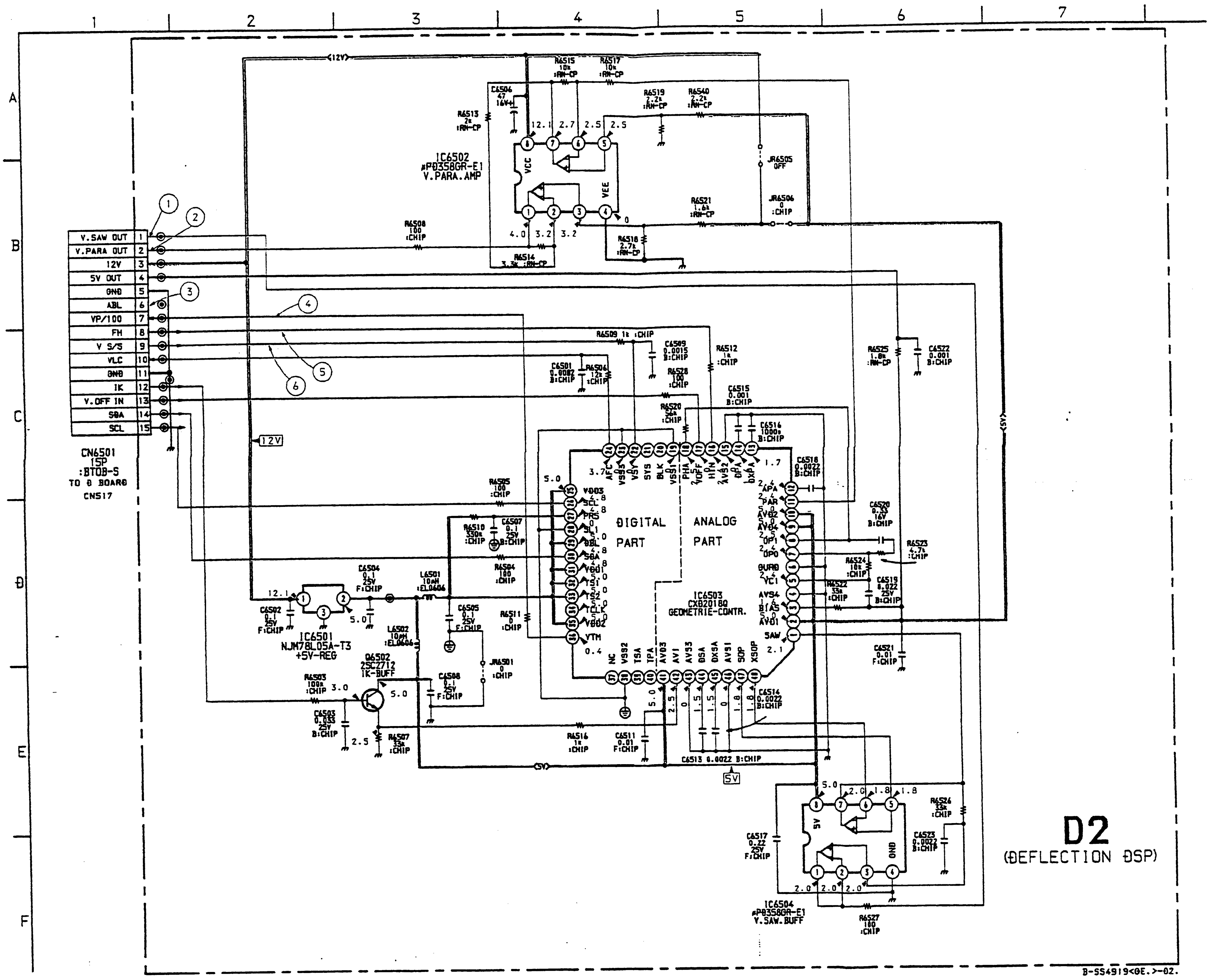
11
12
13
14
IC1401
TBA8443B
YUV-SWICH
IC1404
SDA9188/3X
PIP PROCESSOR
IC1405
SDA9187/2X
A/D INTERFACE
FOR PIP
IC1408
NJM78M08FA
8V-REG
IC1406
TDA4665T
BASEBAND
DELAY LINE CHILD
IC1407
TDA9160A
CHROMA DECODER
/SYNC PROCESSOR
IC1304
CXD2024Q
DIGITAL
COMB FILTER
IC1305
M50456
ON SCREEN
DISPLAY CHILD
Q1401
DTC114EK
HSYNC INVERT
Q1407
2SA1037K
R-Y BUFF
Q1408
2SA1037K
Y-BUFF
Q1409
2SA1037K
B-Y BUFF
Q1410
2SC2412K
FS-BUFF
Q1412
2SC2412K
MUTE SW
Q1413
DTC114EK
VSYNC INVERT
Q1414
2SC2412K
Y-BUFF
Q1415
2SA1037K
FEED BACK AMP
Q1416
2SC2412K
FEED BACK AMP
Q1417
2SC2412K
R-Y BUFF
Q1418
2SC2412K
B-Y BUFF
Q1422
2SA1037K
BGP-BUFF
Q1423
2SC2412K
SSCP SLICE
Q1424
2SC2412K
F-HOOK UP
Q1425
2SC2412K
Y-BUFF
Q1403
2SC2412K
R-Y BUFF
Q1404
2SC2412K
B-Y BUFF
Q1405
2SA1037K
Y-BUFF
Q1421
2SC2412K
Y-BUFF
D1402
BAP202K
PROTECT
Q1411
DTC144K
HSYNC INVERT
Q1323
DTC144K
VSYNC INVERT
Q1309
2SA1037K
2FSC INVERT
Q1311
2SA1037K
2FSC MIX
Q1310
2SA1037K
2FSC MIX
Q1325
2SA1037K SYNC-SEP
Q1318
2SC2412K
SYNC-BUFF
Q1324
2SC2412K
SYNC BUFF
D1307
MA110
D1309
MA110
DSB MIX
Q1317
2SA1037K
VIDEO BUFF
Q1316
2SA1037K
VIDEO-BUFF
Q1314
2SA1037K
Y-BUFF
Q1315
2SA1037K
Y-BUFF
D1401
MA3051L
5V LIMIT
FL1401
FL1402
FL1403
FL1404
FL1405
FL1406
FL1407
FL1301
FL1302
FL1303
LPF
EMI
12V
5V
8V
X1401
20.48MHz
CN1301
40P
WHT
:BTOB-P
NO SIG
GND
TRAP Y
GND
GND C
GND
SCL
GND
SDA
GND
SSCP/SC
VP/50
MUTE
50/60
MON Y
SCK
MON C
STB
MON V
SI
COMB Y
GND
COMB C
GND
V/50
U/50
GND
Y/50
GND
PIP RESET
GND
CHILD V
(SDA)
(SCL)
(5V)
(12V)
(8V)

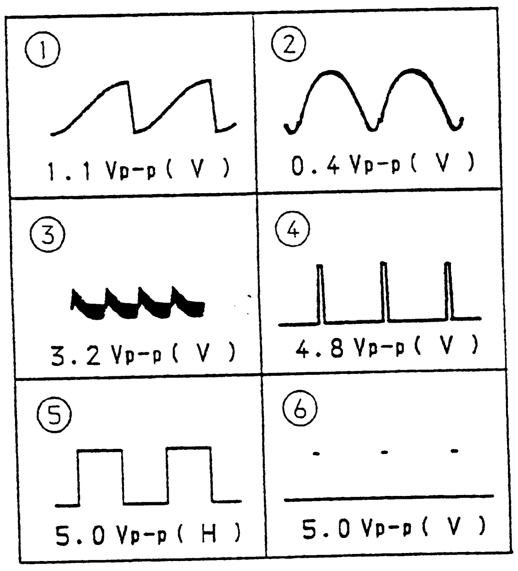

11
12
13
14
15
16
IC1408
NJM78M08FA
8V-REG
Q1413
DTC114EK
VSYNC INVERT
Q1414
2SC2412K
Y-BUFF
Q1415
2SA1037K
FEED BACK AMP
Q1416
2SC2412K
FEED BACK AMP
IC1406
TDA4665T
BASEBAND
DELAY LINE CHILG
IC1407
TDA9160A
CHROMA DECODER
/SYNC PROCESSOR
D1401
MA3051L
5V LIMIT
Q1417
2SC2412K
R-Y BUFF
Q1422
2SA1037K
BGP-BUFF
Q1423
2SC2412K
SSCP SLICE
Q1418
2SC2412K
B-Y BUFF
Q1411
DTC144EK
HSYNC INVERT
IC1304
CXD2024Q
DIGITAL
COMB FILTER
Q1315
2SA1037K
Y-BUFF
Q1314
2SA1037K
Y-BUFF
Q1312
2SA1037K
C-BUFF
FL1303
FL1304
FL1407
LPF
X1402 3.58MHz
X1403 4.43MHz
(9BA)
(9CL)
(12V)
(5V)
8V
5V
8-994919<GE.>-8..

• B BOARD WAVEFORMS

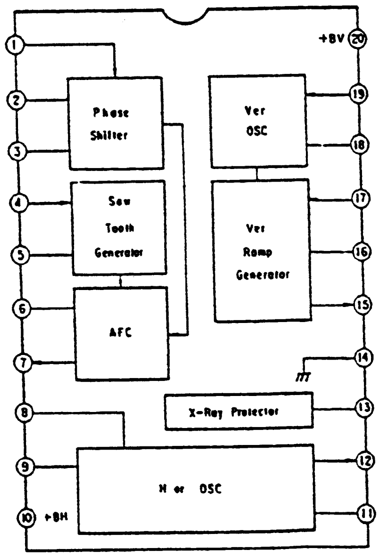

①
0.95 Vp-p (H)
②
0.6 Vp-p (H)
③
PAL1.4 Vp-
③
0.9 Vp-p (H)
③ NTSC3.58
NTSC4.43
2.0 Vp-p (H)
1.4 Vp-p (H)
④
1.8 Vp-p (
⑤
9.0 Vp-p (H)
⑥
0.5 Vp-p (H)
⑦
PAL0.8 Vp
SECAM1.4 Vp
⑦ NTSC3.58
NTSC4.43
0.7 Vp-p (H)
⑧
PAL0.7 Vp-p (H)
SECAM1.2 Vp-p (H)
⑧ NTSC3.5
NTSC4.4
0.6 Vp-p
⑨
PAL0.9 Vp-p (H)
⑨
SECAM1.0Vp-p (H)
⑨ NTSC3.5
NTSC4.4
1.0 Vp-p
1.2 Vp-p
⑩
3.2 Vp-p (H)
⑪
6.0 Vp-p (H)
⑫
0.8 Vp-p
⑬
1.3 Vp-p (H)
⑭
4.0 Vp-p (6.25MHz)
⑮
3.2 Vp-p
⑯
3.2 Vp-p (H)
⑰
3.0 Vp-p (H)
⑱
2.6 Vp-p
⑲
2.7 Vp-p (H)
⑳
5.0 Vp-p(20.48HMz)
㉑
1.0 Vp-p
㉒
0.9 Vp-p (H)
㉓
0.9 Vp-p (H)
㉔
2.3 Vp-
㉕
1.4 Vp-p (H)
㉖
0.5 Vp-p (H)
㉗
0.7 Vp-
㉘
0.9 Vp-p (H)
㉙
3.2 Vp-p (H)
㉚
5.5 Vp-


D2
(DEFLECTION DSP)
CN6501
15P
:BTOB-S
TO B BOARD
CN517
V.SAW OUT
V.PARA OUT
12V
5V OUT
GND
ABL
VP/100
FH
V S/S
VLC
GND
IK
V.OFF IN
SDA
SCL
IC6502
μPD358GR-E1
V.PARA.AMP
IC6501
NJM78L05A-T3
+5V-REG
Q6502
2SC2712
IK-BUFF
IC6503
CXD2018Q
GEOMETRIE-CONTR.
DIGITAL PART
ANALOG PART
IC6504
μPD358GR-E1
V.SAW.BUFF
B-SS4919<0E.>-02.

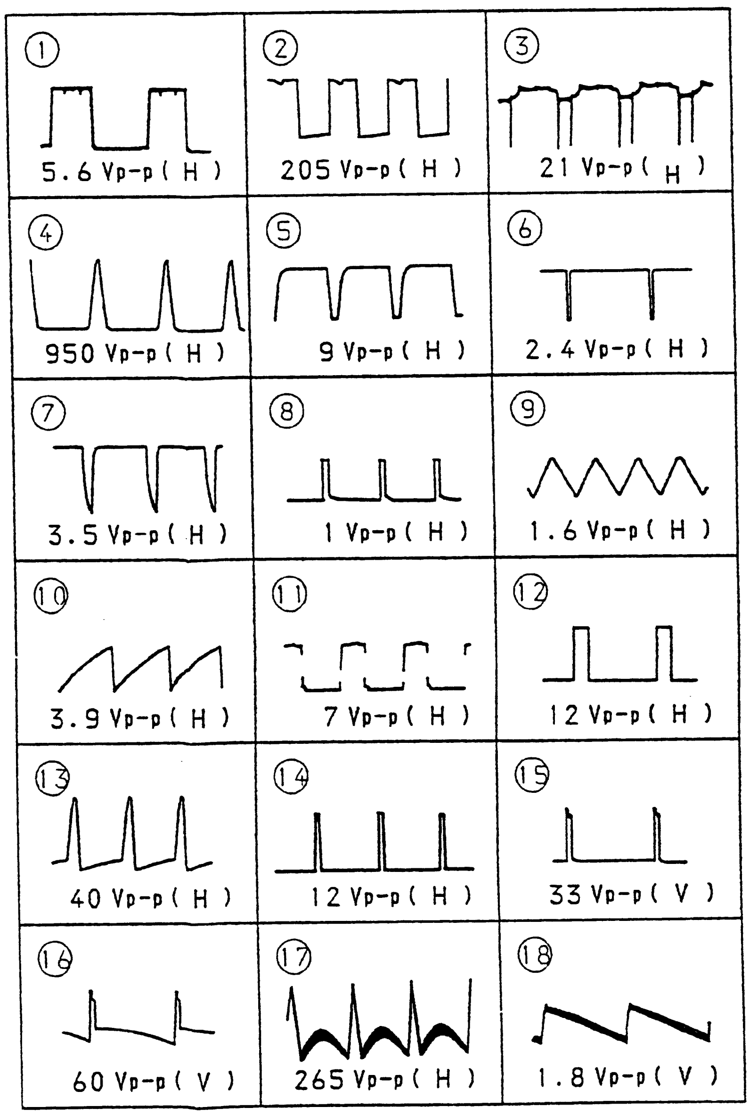
• D2 BOARD WAVEFORMS



D BOARD IC502 LA7856A


+BV
Phase Shifter
Ver OSC
Saw Tooth Generator
Ver Ramp Generator
AFC
X-Ray Protector
H or OSC
+BH

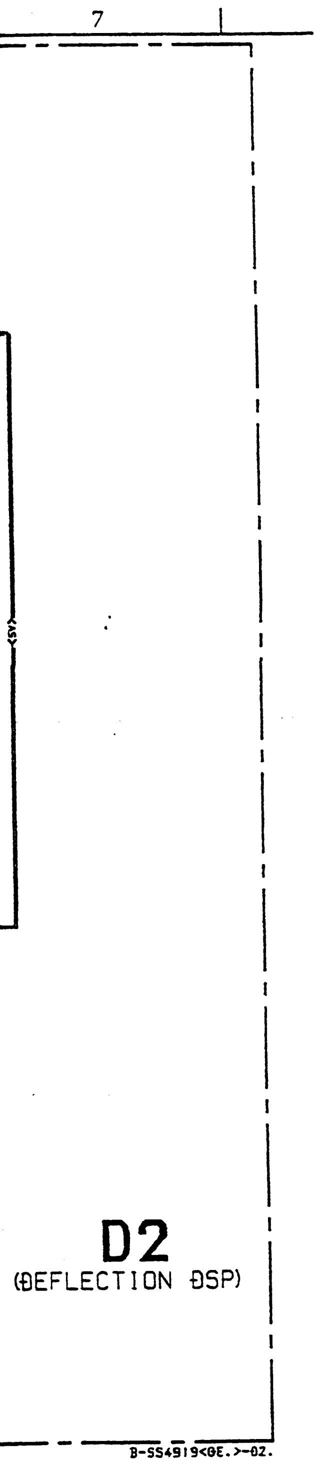
• D BOARD WAVEFORMS

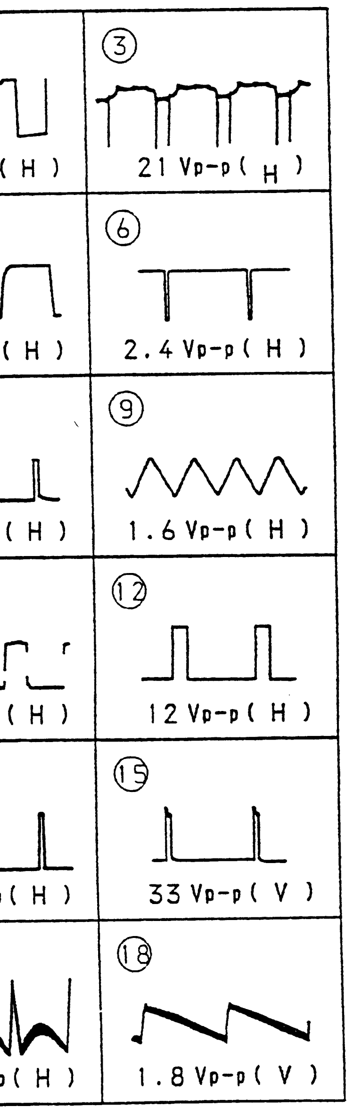


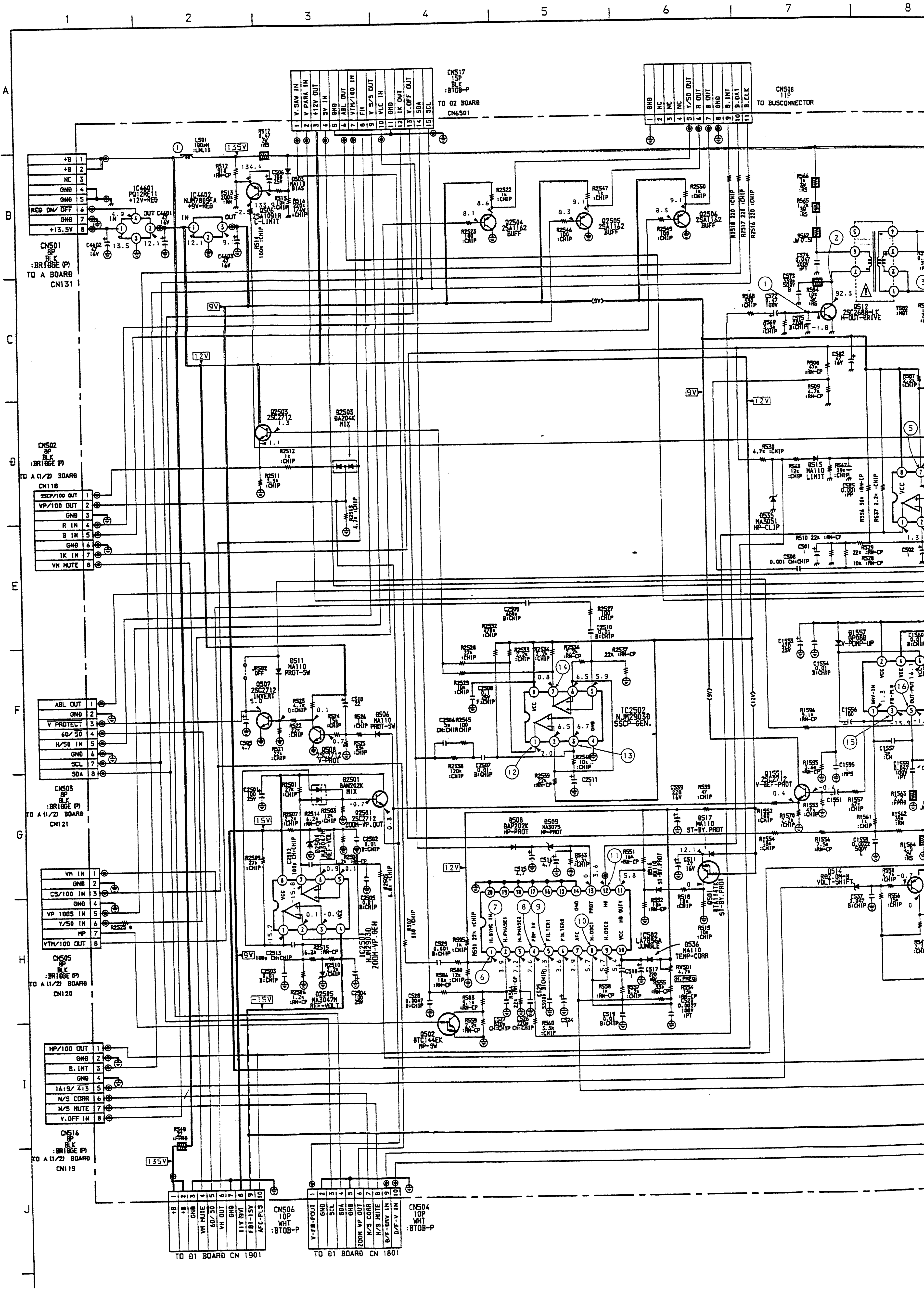
D BOARD * MARK

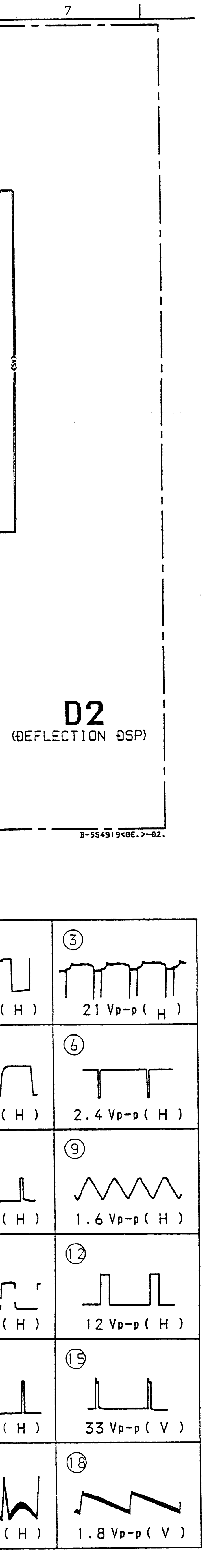
Ref. No.	Location	28 INCH	32 INCH
C3553	H – 10	0.0027 630V	0.0033 630V
R503	F – 9	CONDCTOR	0
R504	F – 10	1M	470k
R538	F – 9	470k	330k
R2525	H – 1	CONDCTOR	0
T504	B – 10	PMT	–

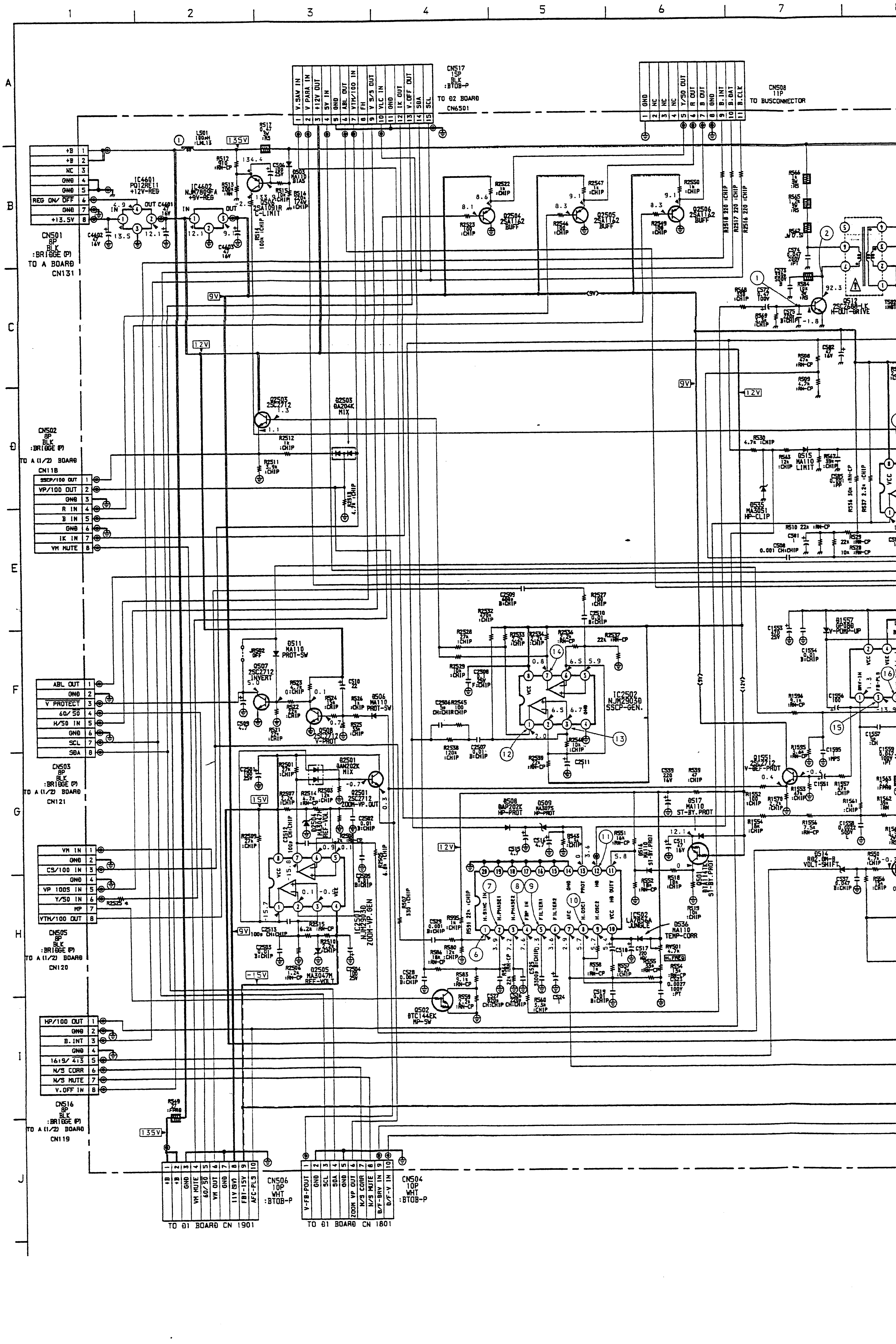
○:TO BE MOUNT
–: NOT MOUNT

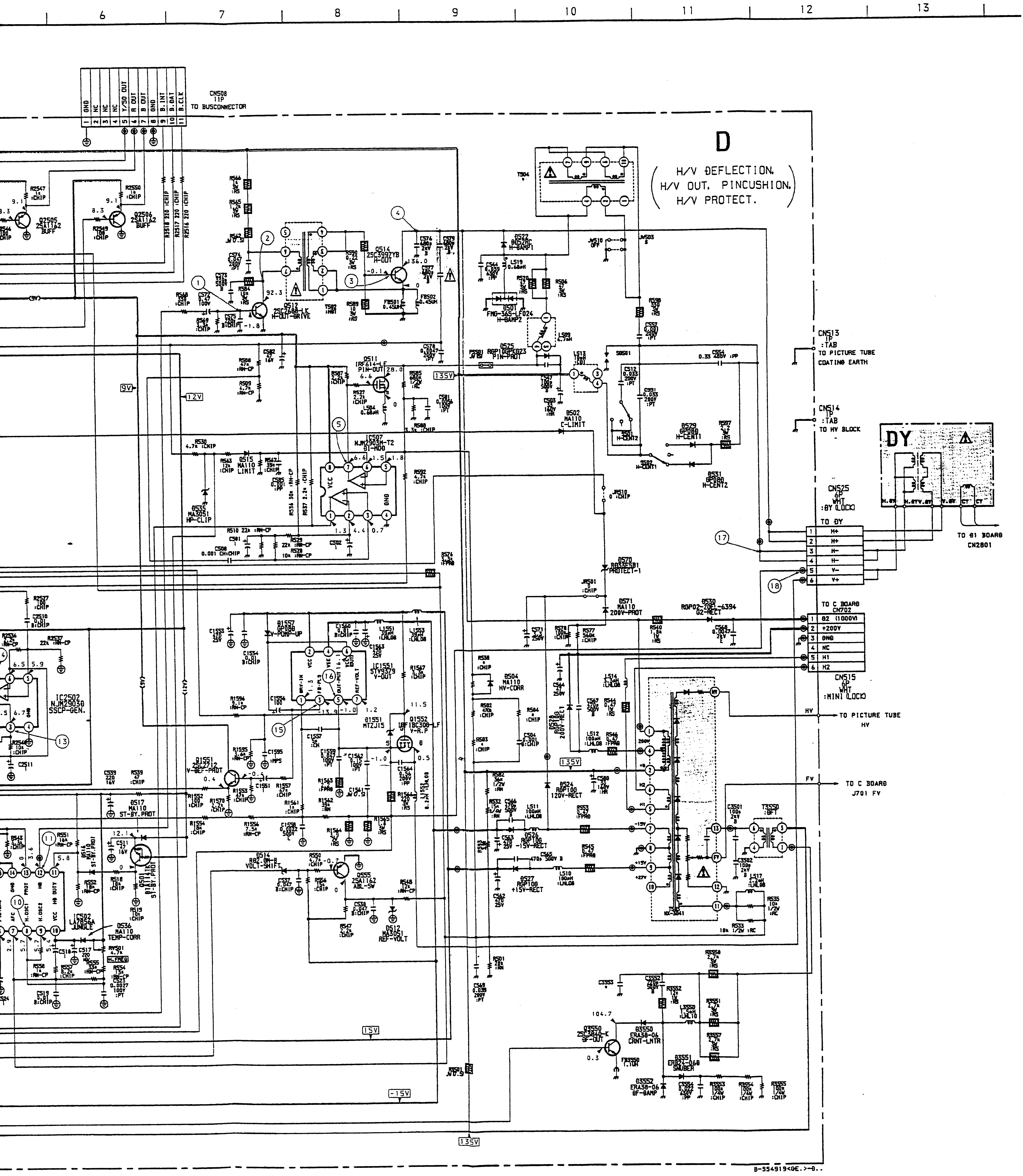

7
D2
(DEFLECTION DSP)
B-SS4919<OE.>-02.


③
(H)
21 Vp-p (H)
⑥
(H)
2.4 Vp-p (H)
⑨
(H)
1.6 Vp-p (H)
⑫
(H)
12 Vp-p (H)
⑮
(H)
33 Vp-p (V)
⑱
(H)
1.8 Vp-p (V)


1
2
3
4
5
6
7
8
A
B
C
D
E
F
G
H
I
J
CN517
15P
BLK
:BTOB-P
TO D2 BOARD
CN6501
V.SAW IN
V PARA IN
+12V OUT
GND
5V IN
ABL OUT
VTH/100 IN
FH
V 5/5 OUT
VLC IN
GND
IK OUT
V.OFF OUT
SDA
SCL
CN508
11P
TO BUSCONNECTOR
GND
NC
NC
Y/50 OUT
R OUT
G OUT
B OUT
GND
B.INT
B.BAT
B.CLK
+B
+B
NC
GND
GND
REG ON/ OFF
GND
+13.5V
CN501
8P
BLK
:BRIDGE (P)
TO A BOARD
CN131
IC4601
PQ12RE11
+12V-REG
IC4602
NJM7809FA
+9V-REG
Q566
2SA1091R
C-LIMIT
Q503
MA110
BIAS
L501
100mH
:LAL13
13.5V
Q2504
2SA1162
BUFF
Q2505
2SA1162
BUFF
Q2506
2SA1162
BUFF
Q512
2SC2688-LK
H-OUT-DRIVE
9V
12V
Q2503
2SC2712
D2503
DA204K
MIX
CN502
8P
BLK
:BRIDGE (P)
TO A (1/2) BOARD
CN118
SSCP/100 OUT
VP/100 OUT
GND
R IN
B IN
GND
IK IN
VM MUTE
D535
MA3051
HP-CLIP
D515
MA110
LIMIT
IC2502
NJM2903D
SSCP-GEN.
D1557
EP0BD
V-PUMP-UP
D511
MA110
PROT-SW
Q507
2SC2712
INVERT
D506
MA110
PROT-SV
Q508
2SC2712
V-PROT
ABL OUT
GND
V PROTECT
60/50
H/50 IN
GND
SCL
SDA
CN503
8P
BLK
:BRIDGE (P)
TO A (1/2) BOARD
CN121
D2501
DAN202K
MIX
Q2501
2SC2712
ZOOM-VP.OUT
15V
IC2501
NJM2903D
ZOOM-VP.GEN
Q1551
2SC2712
V-DEF-PROT
D508
DAP202K
HP-PROT
D509
MA3075
HP-PROT
D517
MA110
ST-BY.PROT
Q501
DTA144EK
ST-BY.PROT
D514
RD2.0M-B
VOLT-SHIFT
VM IN
GND
CS/100 IN
GND
VP 100S IN
Y/50 IN
MP
VTH/100 OUT
CN505
8P
BLK
:BRIDGE (P)
TO A (1/2) BOARD
CN120
IC502
LA7854A
JUNGLE
D536
MA110
TEMP-CORR
H.FREQ
D2505
MA3047M
REF-VOLT
-15V
Q502
DTC144EK
HP-SW
HP/100 OUT
GND
B.INT
GND
16:9/ 4:3
N/S CORR
N/S MUTE
V.OFF IN
CN516
8P
BLK
:BRIDGE (P)
TO A (1/2) BOARD
CN119
13.5V
+B
+B
GND
VM MUTE
60/50
VM OUT
GND
11V (9V)
FBT-15V
AFC-PLS
CN506
10P
WHT
:BTOB-P
TO D1 BOARD CN 1901
V-FB-POUT
GND
SCL
SDA
GND
ZOOM VP OUT
N/S CORR
N/S MUTE
B/F-BRV IN
D/F-V IN
CN504
10P
WHT
:BTOB-P
TO D1 BOARD CN 1801


7
D2
(DEFLECTION DSP)
B-SS4919<DE.>-02.
③ 21 Vp-p (H)
⑥ 2.4 Vp-p (H)
⑨ 1.6 Vp-p (H)
⑫ 12 Vp-p (H)
⑮ 33 Vp-p (V)
⑱ 1.8 Vp-p (V)
(H)
(H)
(H)
(H)
(H)
(H)


1
2
3
4
5
6
7
A
B
C
D
E
F
G
H
I
J
CN517 15P BLK :BTOB-P TO D2 BOARD CN6501
V.SAW IN
V PARA IN
+12V OUT
5V IN
GND
ABL OUT
VTM/100 IN
FH
V S/S OUT
VLC IN
GND
IK OUT
V.OFF OUT
SDA
SCL
CN508 11P TO BUSCONNECTOR
GND
NC
NC
NC
Y/SD OUT
R OUT
G OUT
B OUT
GND
B.INT
B.DAT
B.CLK
CN501 8P BLK :BRIDGE (P) TO A BOARD CN131
+B
+B
NC
GND
GND
REG ON/ OFF
GND
+13.5V
IC4601 PQ12RE11 +12V-REG
IC4602 NJM7809FA +9V-REG
L501 180uH :LHL13
135V
Q506 2SA1091R C-LIMIT
D503 MA110 BIAS
Q2504 2SA1162 BUFF
Q2505 2SA1162 BUFF
Q2506 2SA1162 BUFF
9V
12V
Q2503 2SC2712
D2503 BA204K MIX
CN502 8P BLK :BRIDGE (P) TO A (1/2) BOARD CN118
SSCP/100 OUT
VP/100 OUT
GND
R IN
B IN
GND
IK IN
VM MUTE
CN503 8P BLK :BRIDGE (P) TO A (1/2) BOARD CN121
ABL OUT
GND
V PROTECT
60/50
H/50 IN
GND
SCL
SDA
D511 MA110 PROT-SW
Q507 2SC2712 INVERT
Q508 2SC2712 V-PROT
D506 MA110 PROT-SW
IC2502 NJM2503D SSCP-GEN.
Q2501 BAN202K MIX
Q2501 2SC2712 ZOOM-VP.OUT
D2504 MA3047M REF-VOL
IC2501 NJM2503D ZOOM-VP.GEN
D2505 MA3047M REF-VOLT
15V
-15V
CN505 8P BLK :BRIDGE (P) TO A (1/2) BOARD CN120
VM IN
GND
CS/100 IN
GND
VP 100S IN
Y/SD IN
HP
VTM/100 OUT
D508 BAP202K HP-PROT
D509 MA3075 HP-PROT
D517 MA110 ST-BY.PROT
IC502 LA7852A JUNGLE
H.SYNC IN
H.PHASE1
H.PHASE2
FBP IN
FILTER1
FILTER2
AFC
GND
H.OSC1
H.OSC2
VCC
HD DUTY
PROT
Q501 DTC144EK ST-BY.PROT
D536 MA110 TEMP-CORR
Q502 DTC144EK HP-SW
H.FREQ
CN516 8P BLK :BRIDGE (P) TO A (1/2) BOARD CN119
HP/100 OUT
GND
B.INT
GND
16:9/ 4:3
N/S CORR
N/S MUTE
V.OFF IN
CN506 10P WHT :BTOB-P TO D1 BOARD CN 1901
+B
+B
GND
VM MUTE
60/50
VM OUT
GND
11V (9V)
FBT-15V
AFC-PLS
CN504 10P WHT :BTOB-P TO D1 BOARD CN 1801
V-FB-POUT
GND
SCL
SDA
GND
ZOOM VP OUT
N/S CORR
N/S MUTE
D/F-DRV IN
D/F-V IN
Q512 2SC2688-LK H-OUT-DRIVE
D535 MA3051 HP-CLIP
D515 MA110 LIMIT
D1557 GP08D V-PUMP-UP
Q1551 2SC2712 V-BEF-PROT
D514 RD2.0M-B VOLT-SHIFT
(9V)
(12V)
(5V)

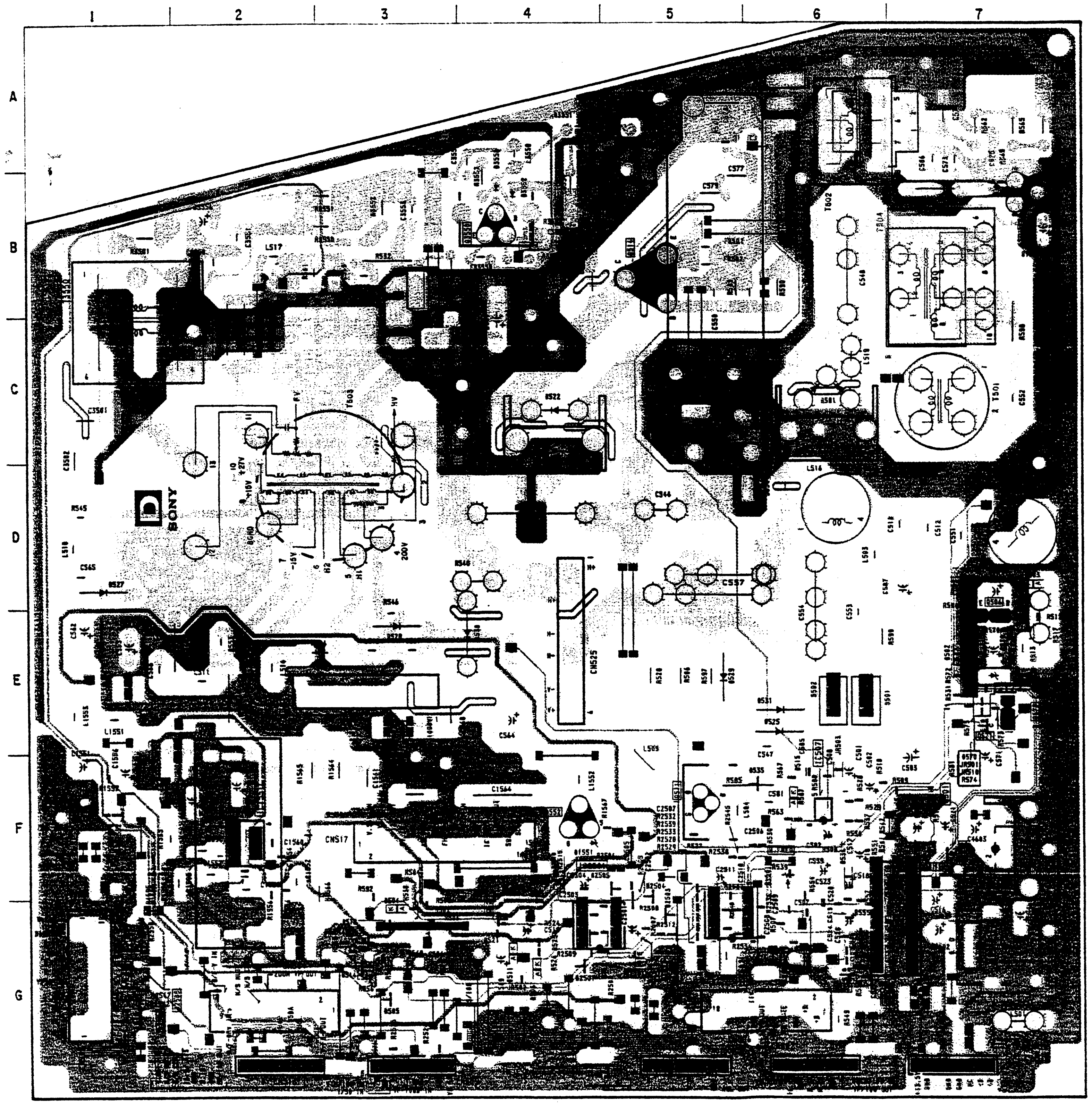

D
H/V DEFLECTION,
H/V OUT, PINCUSHION,
H/V PROTECT.
CN508
11P
TO BUSCONNECTOR
GND
NC
NC
NC
Y/SD OUT
R OUT
G OUT
B OUT
GND
B.INT
B.DAT
B.CLK
Q2505
2SA1162
BUFF
Q2506
2SA1162
BUFF
Q512
2SC2688-LK
H-OUT-DRIVE
Q514
2SC3997YB
H-OUT
T502
HDT
T504
Q511
IRF614-LF
PIN-OUT
IC507
NJM2903M-T2
DI-MOD
D535
MA3051
HP-CLIP
D515
MA110
LIMIT
D501
FMG-36S-LF024
H-DAMP2
D522
RU4AM
H-DAMP1
D525
RGP10GPKG23
PIN-PROT
D502
MA110
C-LIMIT
D529
GP08D
H-CENT1
D531
GP08D
H-CENT2
D570
RD33ESB1
PROTECT-1
D571
MA110
200V-PROT
D530
RGP02-20EL-6394
G2-RECT
D504
MA110
HV-CORR
D524
RGP10G
120V-RECT
D526
RGP10G
-15V-RECT
D527
RGP10G
+15V-RECT
IC1551
STV9379
V-OUT
D1557
GP08D
V-PUMP-UP
D1551
MTZJ15
Q1552
IRF1BC30G-LF
V-R.P
Q1551
2SC2712
V-DEF-PROT
IC2502
NJM2903D
SSCP-GEN.
IC502
LA7856A
JUNGLE
D517
MA110
ST-BY.PROT
D536
MA110
TEMP-CORR
D514
RD2.0M-B
VOLT-SHIFT
Q555
2SA1162
ABL-SW
D512
MA3051
REF-VOLT
Q3550
2SC3840-K
BF-OUT
D3550
ERA38-06
CRNT-LMTR
D3551
ERB24-06B
SNUBER
D3552
ERA38-06
BF-DAMP
T3550
:BFT
T503
NX-3041
CN513
1P
:TAB
TO PICTURE TUBE
COATING EARTH
CN514
1P
:TAB
TO HV BLOCK
DY
CN525
6P
WHT
:BY LOCK
TO DY
H+
H+
H-
H-
V-
V+
TO B1 BOARD
CN2801
TO C BOARD
CN702
G2 (1000V)
+200V
GND
NC
H1
H2
CN515
6P
WHT
:MINI LOCK
HV
TO PICTURE TUBE
HV
FV
TO C BOARD
J701 FV
9V
12V
135V
15V
-15V
6
7
8
9
10
11
12
13
B-554919<GE.>-B..

D [H/V DEFLECTION, H/V OUT, PINCUSHION, H/V PROTECT] D2 [DEFLECTION DSP]

Note :

- ▒ : Pattern from the side which enables seeing.
- ■ : **Pattern of the rear side.**

- D BOARD -



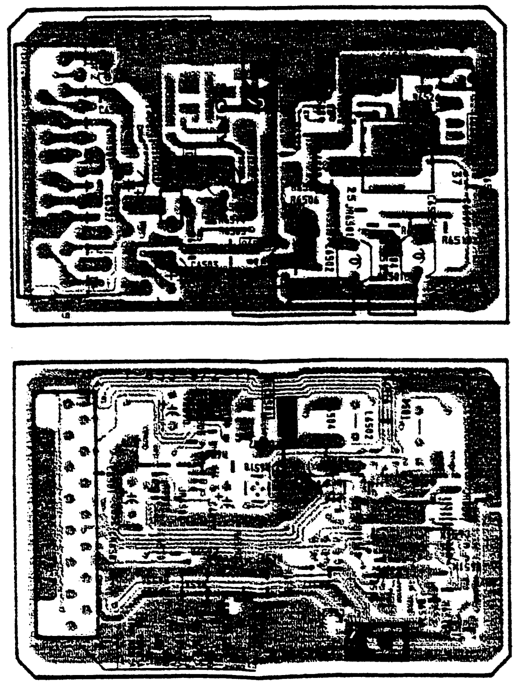
D BOARD

IC	
IC502	G - 7
IC507	F - 6
IC1551	F - 2
IC2501	G - 4
IC2502	G - 5
IC4601	G - 7
IC4602	F - 7

TRANSISTOR	
Q501	F - 7
Q502	G - 6
Q506	E - 7
Q507	G - 4
Q508	F - 4
Q511	F - 5
Q512	B - 7
Q514	B - 5
Q555	G - 3
Q1551	F - 1
Q1552	F - 4
Q2501	G - 5
Q2503	G - 5
Q2504	G - 1
Q2505	G - 1
Q2506	G - 1
Q3550	B - 4

DIODE	
D501	C - 6
D502	E - 7
D503	D - 7
D504	G - 3
D506	G - 4
D508	F - 7
D509	F - 7
D511	G - 4
D512	G - 3
D514	G - 3
D515	F - 6
D516	F - 7
D517	F - 7
D522	C - 4
D524	E - 2
D525	E - 5
D526	E - 2
D527	D - 1
D528	E - 3
D529	E - 5
D530	E - 4
D531	E - 5
D535	F - 6
D570	E - 7
D571	E - 7
D1551	F - 4
D1557	F - 1
Q2501	G - 4
D2503	G - 5
D2504	F - 5
D2505	F - 5
D3550	B - 4
D3551	A - 4
D3552	B - 4

- D2 BOARD -



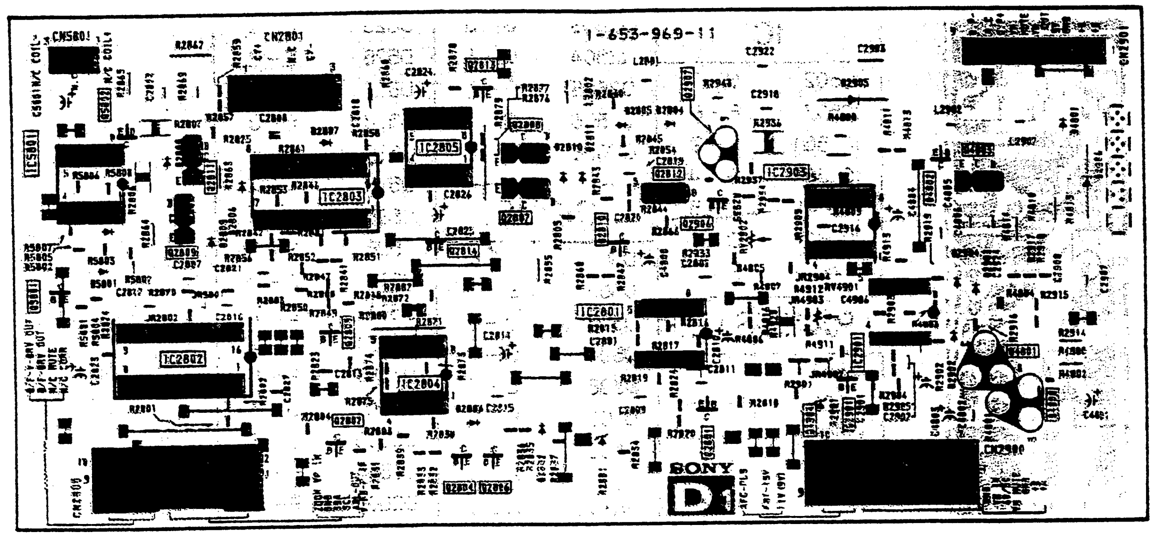
Note :

- : Pattern from the side which enables seeing.
- ▒ : **Pattern of the rear side.**

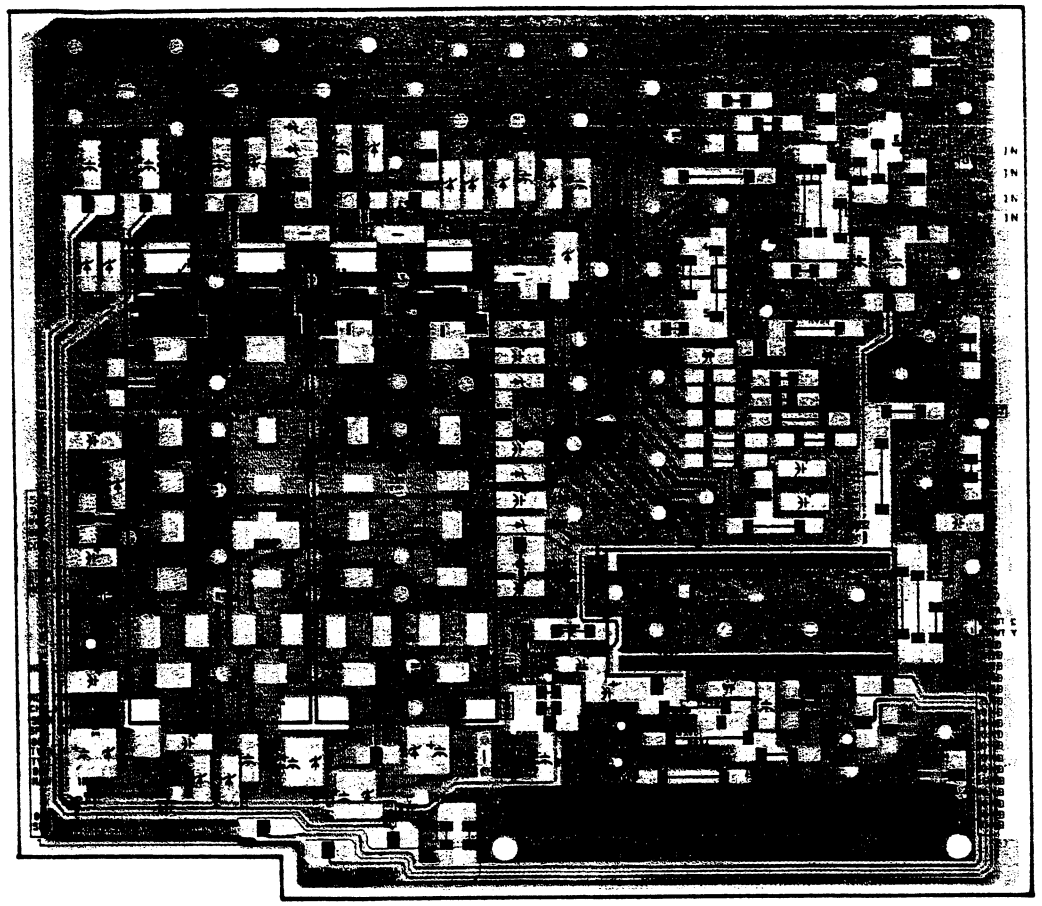
D1 [DYNAMIC CONVERGENCE, QUADRA POLE, DF DRIVE, PICTURE ROTATION]

J [AUDIO/VIDEO SW, AUDIO/VIDEO IN/OUT]

– D1 BOARD –


1-653-969-11
CN5801
CN2801
IC2801
IC2802
IC2803
IC2804
IC2805
IC2903
SONY
D1

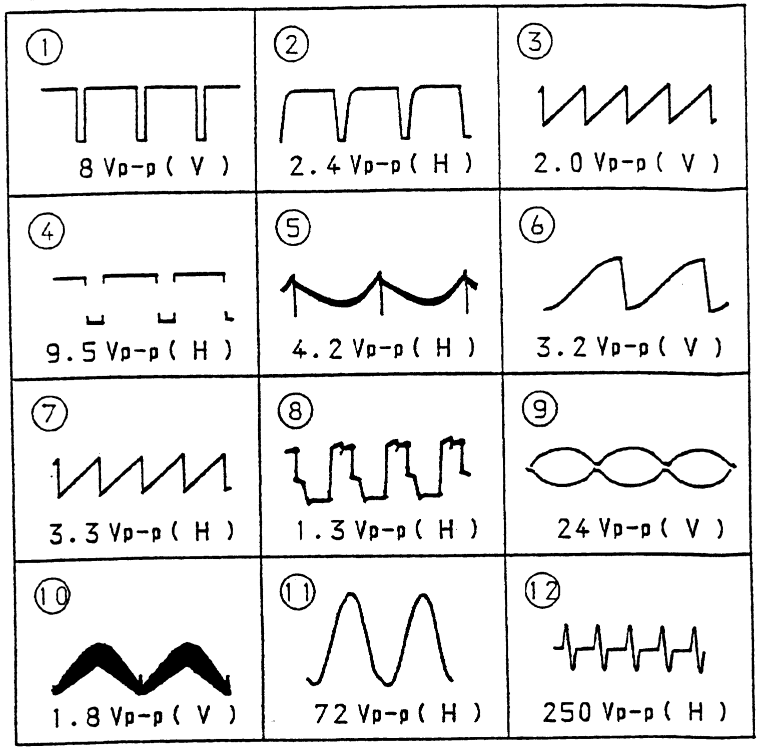
– J BOARD –



Note :

- ▨ : Pattern from the side which enables seeing.
- ■ : **Pattern of the rear side.**

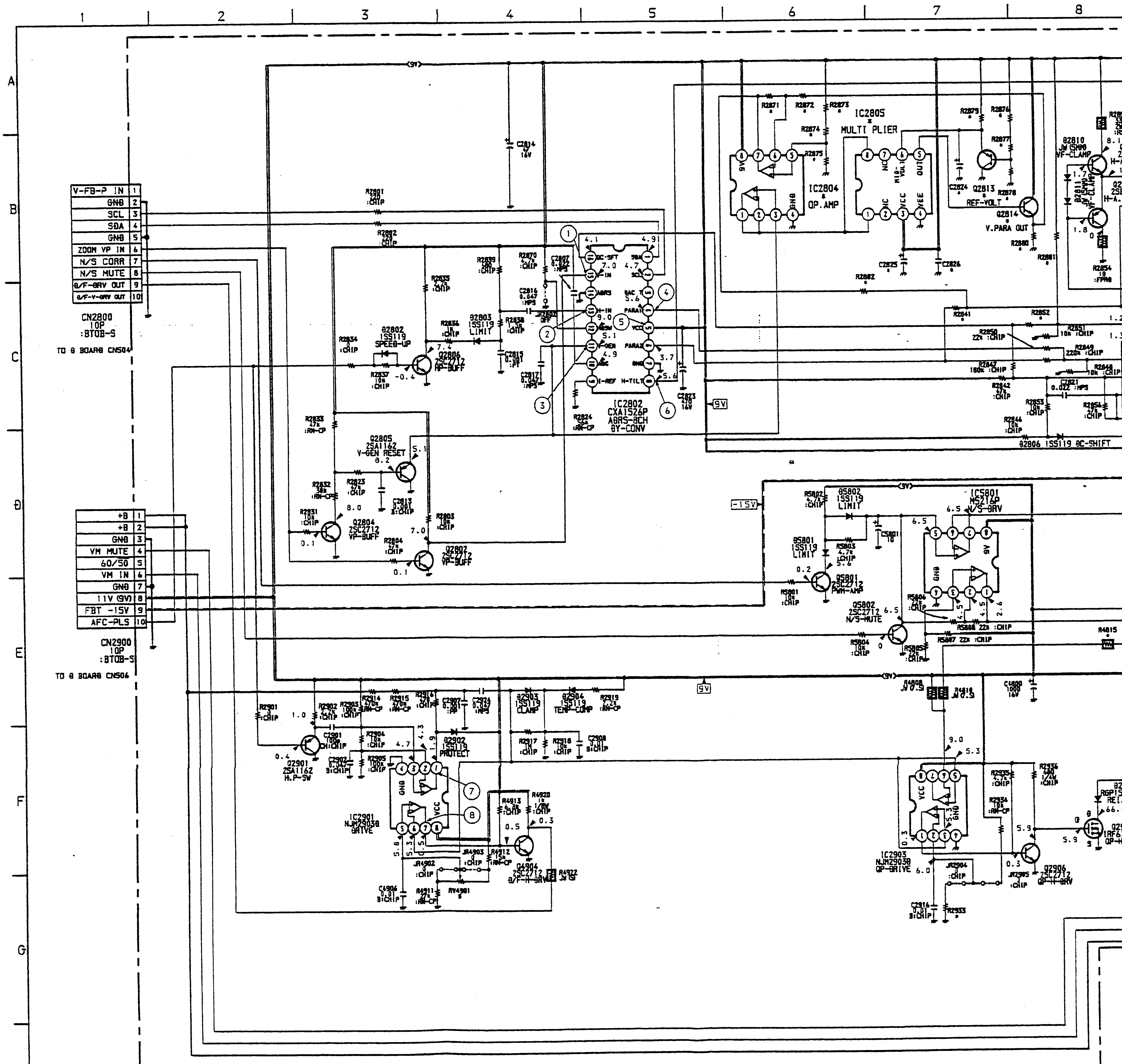
• D1 BOARD WAVEFORMS



D1 BOARD ＊ MARK

Ref. No.	Location	28 INCH	32 INCH
C2824	B－7	47 16V	－
C2825	B－7	47 16V	－
C2826	B－7	0.01	－
C2903	E－9	0.033 220V	0.022 200V
C2922	F－9	0.0015 630V	0.001 630V
IC2804	B－6	uPC358C	－
IC2805	B－7	CA0005AD	－
Q2813	B－7	2SA1162	－
Q2814	B－8	2SC2712	－
R2841	C－7	22k	47k
R2852	C－8	47k	10k
R2871	A－6	39k	－
R2872	A－6	10k	－
R2873	A－6	220	－
R2874	B－6	10k	－
R2875	B－6	10k	－
R2876	B－7	680	－
R2877	B－7	10k	－
R2878	B－7	10k	－
R2879	B－7	470 1/2W	－
R2880	B－8	470 1/2W	－
R2881	B－8	39k	－
R2882	C－7	22k	－
R2933	G－7	20k	22k
R4815	E－8	33 3W	39 3W

○:TO BE MOUNT
－: NOT MOUNT


1
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A
B
C
D
E
F
G
H
V-FB-P IN 1
GND 2
SCL 3
SDA 4
GND 5
ZOOM VP IN 6
N/S CORR 7
N/S MUTE 8
D/F-DRV OUT 9
D/F-V-DRV OUT 10
CN2800
10P
:BTOB-S
TO B BOARD CN504
+B 1
+B 2
GND 3
VM MUTE 4
60/50 5
VM IN 6
GND 7
11V (9V) 8
FBT -15V 9
AFC-PLS 10
CN2900
10P
:BTOB-S
TO B BOARD CN506
(9V)
C2814
IC2805
MULTI PLIER
IC2804
OP.AMP
Q2813
REF-VOLT
Q2814
V.PARA OUT
Q2810
VF-CLAMP
Q2802
1SS119
SPEED-UP
Q2803
1SS119
LIMIT
Q2806
2SC2712
RP-BUFF
IC2802
CXA1526P
ABRS-DCH
DY-CONV
Q2805
2SA1162
V-GEN RESET
Q2804
2SC2712
VP-BUFF
Q2807
2SC2712
VP-BUFF
D2806 1SS119 DC-SHIFT
-15V
D5802
1SS119
LIMIT
IC5801
M5216P
N/S-DRV
D5801
1SS119
LIMIT
Q5801
2SC2712
PWM-AMP
Q5802
2SC2712
N/S-MUTE
R4815
C4800
Q2901
2SA1162
H.P-SW
D2902
1SS119
PROTECT
D2903
1SS119
CLAMP
D2904
1SS119
TEMP-COMP
IC2901
NJM2903D
DRIVE
Q4904
2SC2712
D/F-H-DRV
IC2903
NJM2903D
QP-DRIVE
Q2906
2SC2712
QP-H-DRV
9V

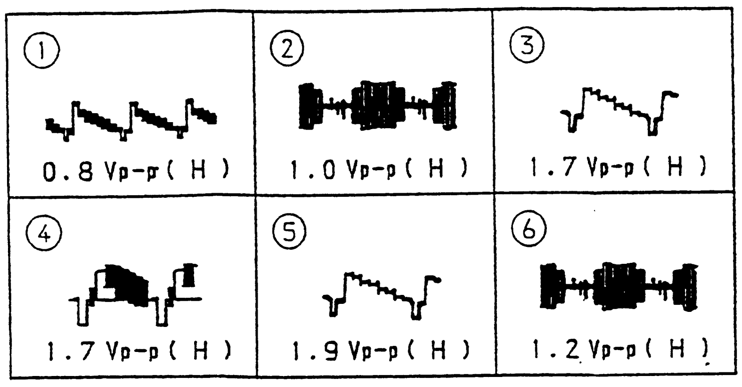
D1

(DYNAMIC CONVERGENCE,
QUADRA POLE, DF DRIVE,
PICTURE ROTATION.)

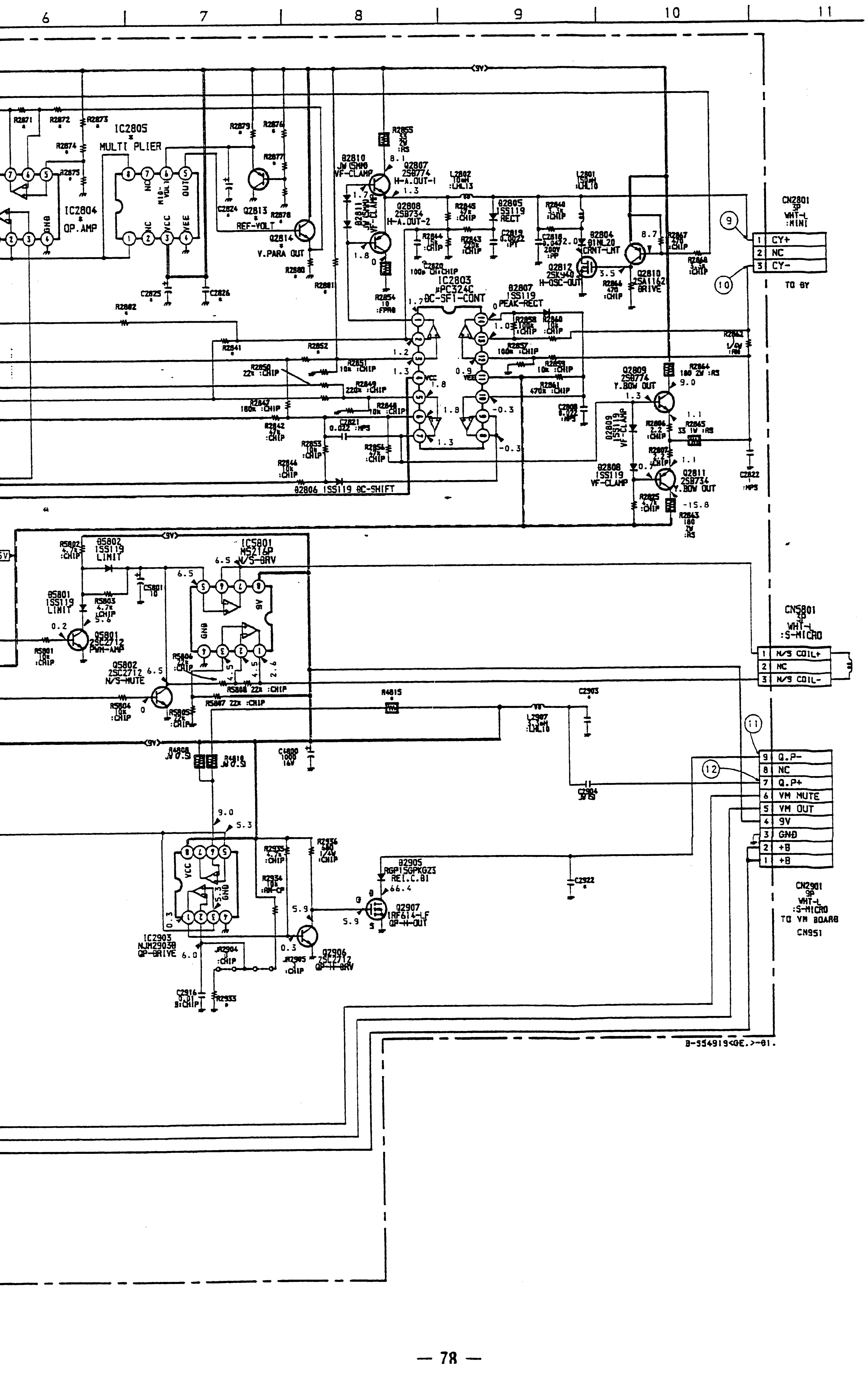
Ref. No.	Location	28 INCH	32 INCH
R2871	A－6	39k	－
R2872	A－6	10k	－
R2873	A－6	220	－
R2874	B－6	10k	－
R2875	B－6	10k	－
R2876	B－7	680	－
R2877	B－7	10k	－
R2878	B－7	10k	－
R2879	B－7	470 1/2W	－
R2880	B－8	470 1/2W	－
R2881	B－8	39k	－
R2882	C－7	22k	－
R2933	G－7	20k	22k
R4815	E－8	33 3W	39 3W

○:TO BE MOUNT
－: NOT MOUNT

• J BOARD WAVEFORMS



①
0.8 Vp-p (H)
②
1.0 Vp-p (H)
③
1.7 Vp-p (H)
④
1.7 Vp-p (H)
⑤
1.9 Vp-p (H)
⑥
1.2 Vp-p (H)



6
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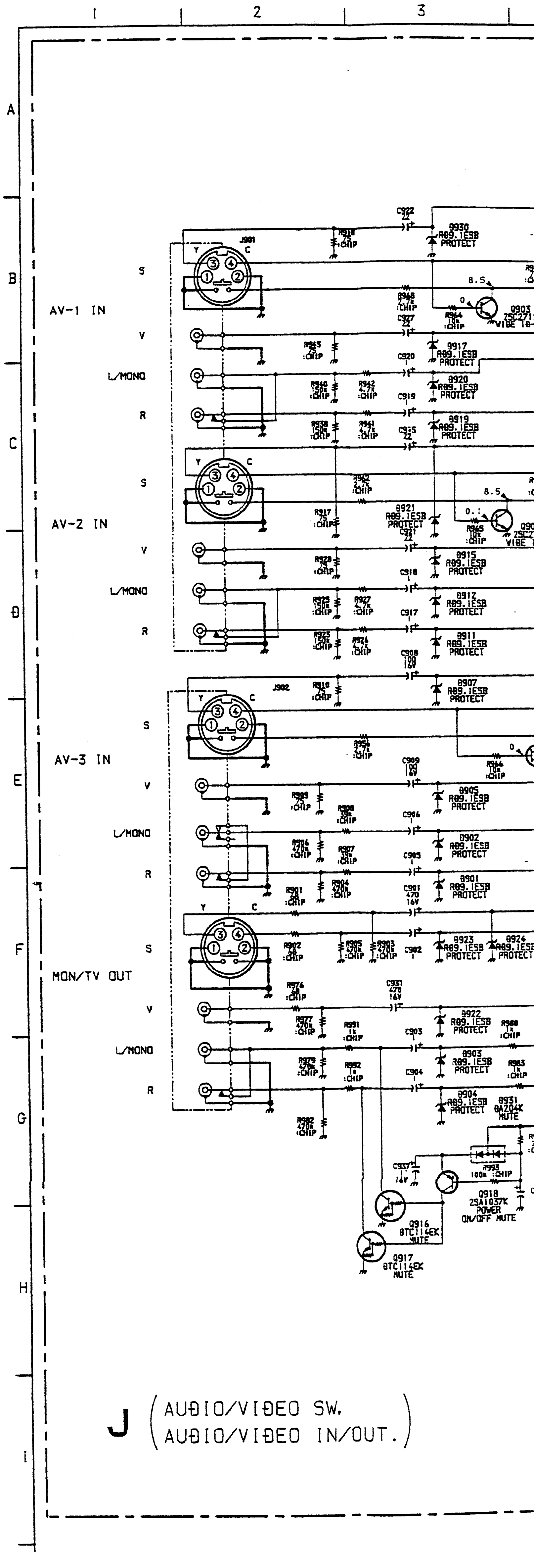
9
10
11
IC2805 MULTI PLIER
IC2804 OP.AMP
Q2813 REF-VOLT
Q2814 Y.PARA OUT
Q2810 JW(SMP) VF-CLAMP
Q2807 2SB774 H-A.OUT-1
Q2808 2SB734 H-A.OUT-2
Q2805 1SS119 RECT
Q2804 01NL20 CRNT-LMT
Q2810 2SA1162 DRIVE
Q2812 2SK940 H-OSC-OUT
IC2803 μPC324C BC-SFT-CONT
Q2807 1SS119 PEAK-RECT
Q2809 2SB774 Y.BOW OUT
Q2811 2SB734 Y.BOW OUT
Q2808 1SS119 VF-CLAMP
Q2806 1SS119 BC-SHIFT
CN2801 3P WHT-L :MINI
1 CY+
2 NC
3 CY-
TO 6Y
⑨
⑩
IC5801 M5216P N/S-DRV
Q5802 1SS119 LIMIT
Q5801 1SS119 LIMIT
Q5801 2SC2712 PWM-AMP
Q5802 2SC2712 N/S-MUTE
CN5801 3P WHT-L :S-MICRO
1 N/S COIL+
2 NC
3 N/S COIL-
R4815
⑪
⑫
9 Q.P-
8 NC
7 Q.P+
6 VM MUTE
5 VM OUT
4 9V
3 GND
2 +B
1 +B
CN2901 9P WHT-L :S-MICRO TO VM BOARD CN951
IC2903 NJM2903D QP-DRIVE
Q2905 RGP15GPKG23 REI.C.81
Q2907 IRF614-LF QP-H-OUT
Q2906 2SC2712 QP-H-DRV
B-554919<0E.>-81.



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A
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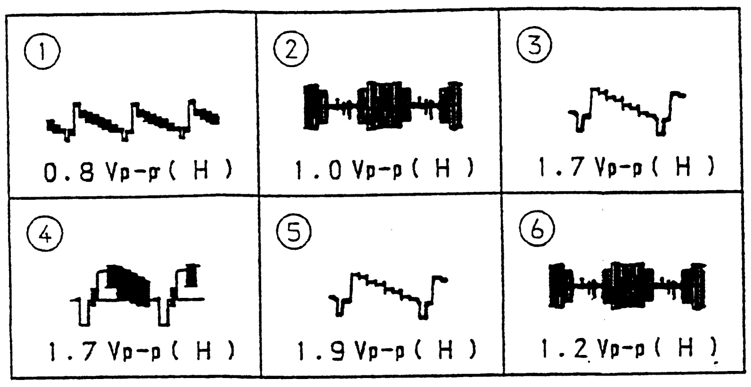
G
H
I
AV-1 IN
AV-2 IN
AV-3 IN
MON/TV OUT
S
V
L/MONO
R
J901
J902
RD9.1ESB PROTECT
Q903 2SC2712 VIDE IO-
Q918 2SA1037K POWER ON/OFF MUTE
Q916 DTC114EK MUTE
Q917 DTC114EK MUTE
D931 MA204K MUTE

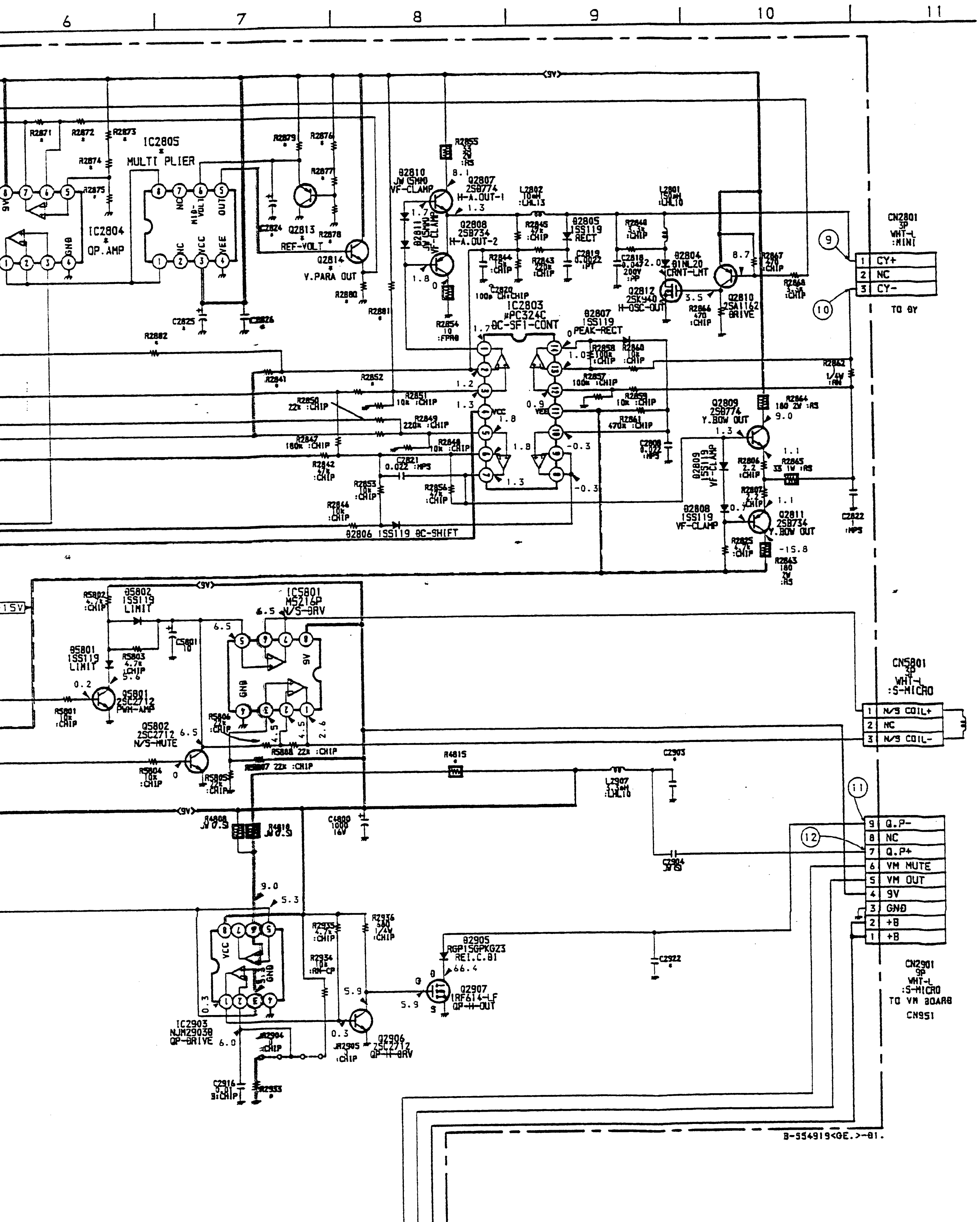
J (AUDIO/VIDEO SW. AUDIO/VIDEO IN/OUT.)

Ref. No.	Location	28 INCH	32 INCH
R2871	A − 6	39k	−
R2872	A − 6	10k	−
R2873	A − 6	220	−
R2874	B − 6	10k	−
R2875	B − 6	10k	−
R2876	B − 7	680	−
R2877	B − 7	10k	−
R2878	B − 7	10k	−
R2879	B − 7	470 1/2W	−
R2880	B − 8	470 1/2W	−
R2881	B − 8	39k	−
R2882	C − 7	22k	−
R2933	G − 7	20k	22k
R4815	E − 8	33 3W	39 3W

○ : TO BE MOUNT
− : NOT MOUNT

• J BOARD WAVEFORMS





6
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8
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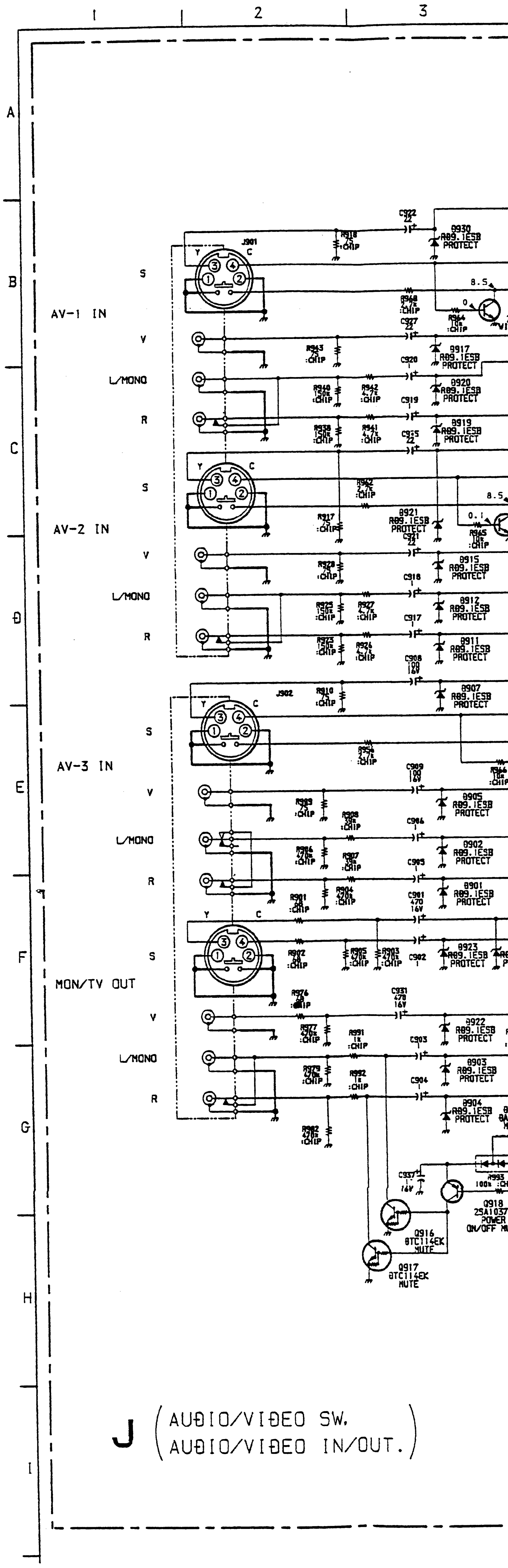
10
11
IC2805 MULTI PLIER
IC2804 OP.AMP
Q2813 REF-VOLT
Q2814 V.PARA OUT
Q2810 VF-CLAMP
Q2807 2SB774 H-A.OUT-1
Q2808 2SB734 H-A.OUT-2
D2805 1SS119 RECT
Q2804 CRNT-LMT
Q2812 2SK540 H-OSC-OUT
Q2810 2SA1162 DRIVE
IC2803 μPC324C DC-SFT-CONT
D2807 1SS119 PEAK-RECT
Q2809 2SB774 Y.BOW OUT
D2809 1SS119 VF-CLAMP
D2808 1SS119 VF-CLAMP
Q2811 2SB734 Y.BOW OUT
D2806 1SS119 DC-SHIFT
CN2801 3P WHT-L :MINI
1 CY+
2 NC
3 CY−
TO GY
⑨
⑩
IC5801 M5216P N/S-DRV
D5802 1SS119 LIMIT
D5801 1SS119 LIMIT
Q5801 2SC2712 PWM-AMP
Q5802 2SC2712 N/S-MUTE
CN5801 3P WHT-L :S-MICRO
1 N/S COIL+
2 NC
3 N/S COIL−
R4815
L2907
C2903
⑪
⑫
9 Q.P−
8 NC
7 Q.P+
6 VM MUTE
5 VM OUT
4 9V
3 GND
2 +B
1 +B
CN2901 9P WHT-L :S-MICRO TO VM BOARD CN951
IC2903 NJM2903D QP-DRIVE
D2905 RGP15GPKGZ3 REI.C.81
Q2907 IRF614-LF QP-H-OUT
Q2906 2SC2712 QP-H-DRV
B-554919<GE.>-81.



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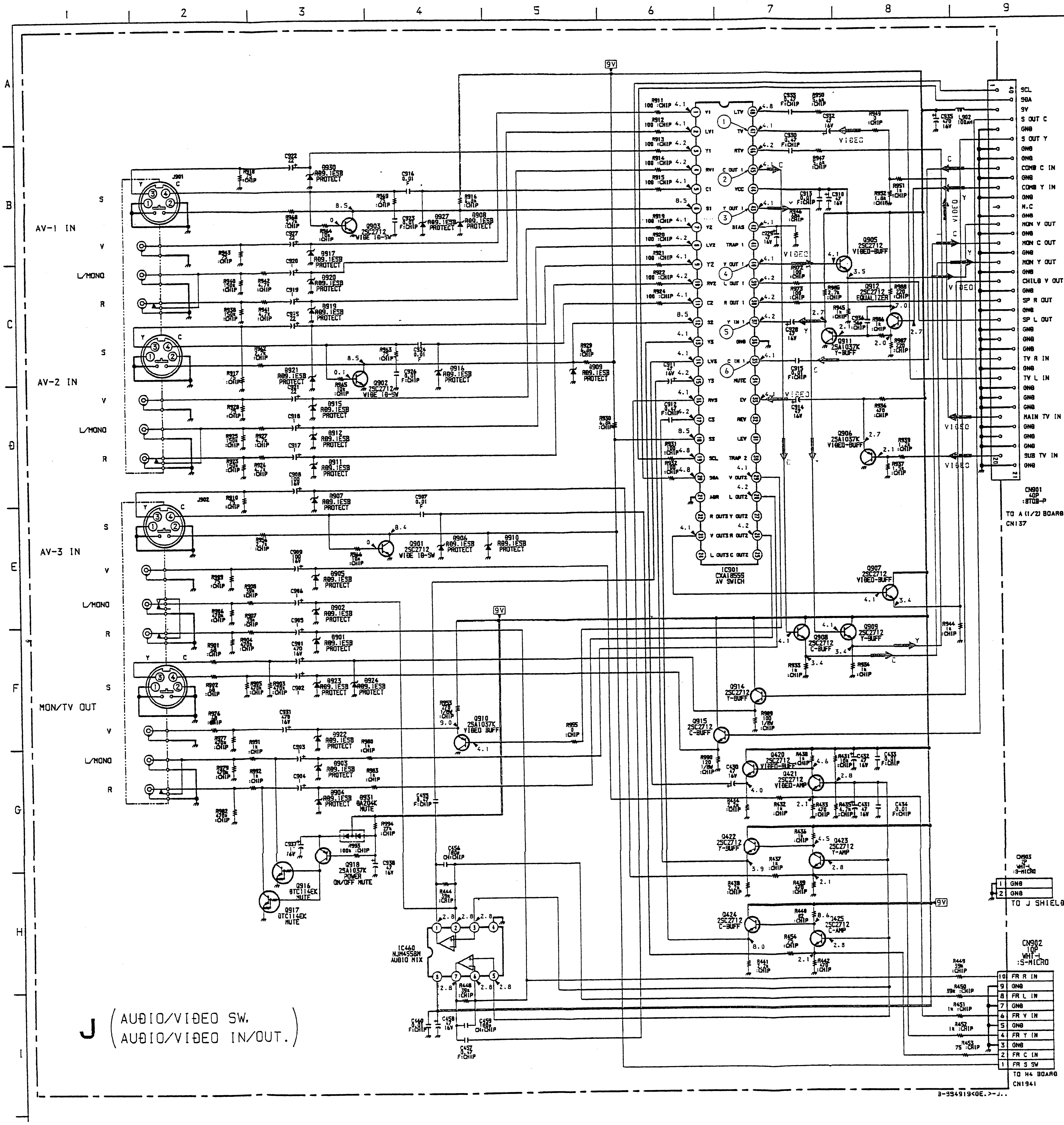
I
J901
AV-1 IN
AV-2 IN
J902
AV-3 IN
MON/TV OUT
S
V
L/MONO
R
Y
C
PROTECT
Q918 2SA1037 POWER ON/OFF MUTE
Q916 DTC114EK MUTE
Q917 DTC114EK MUTE

J (AUDIO/VIDEO SW. AUDIO/VIDEO IN/OUT.)


1
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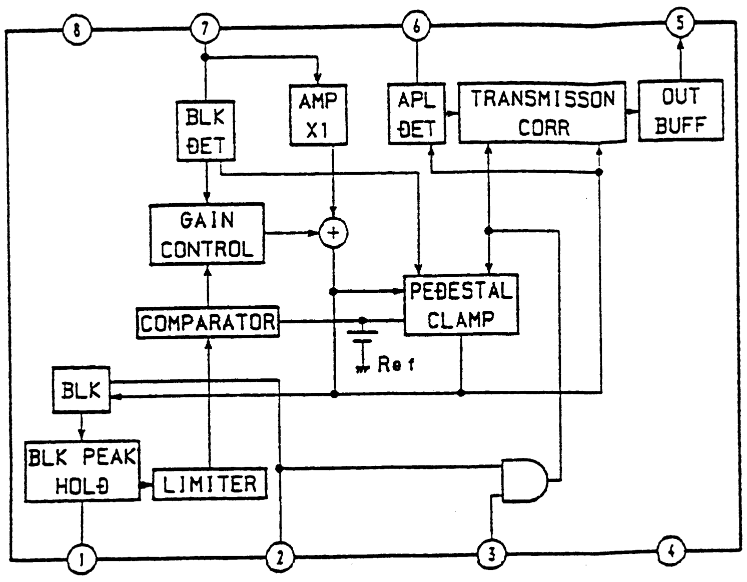
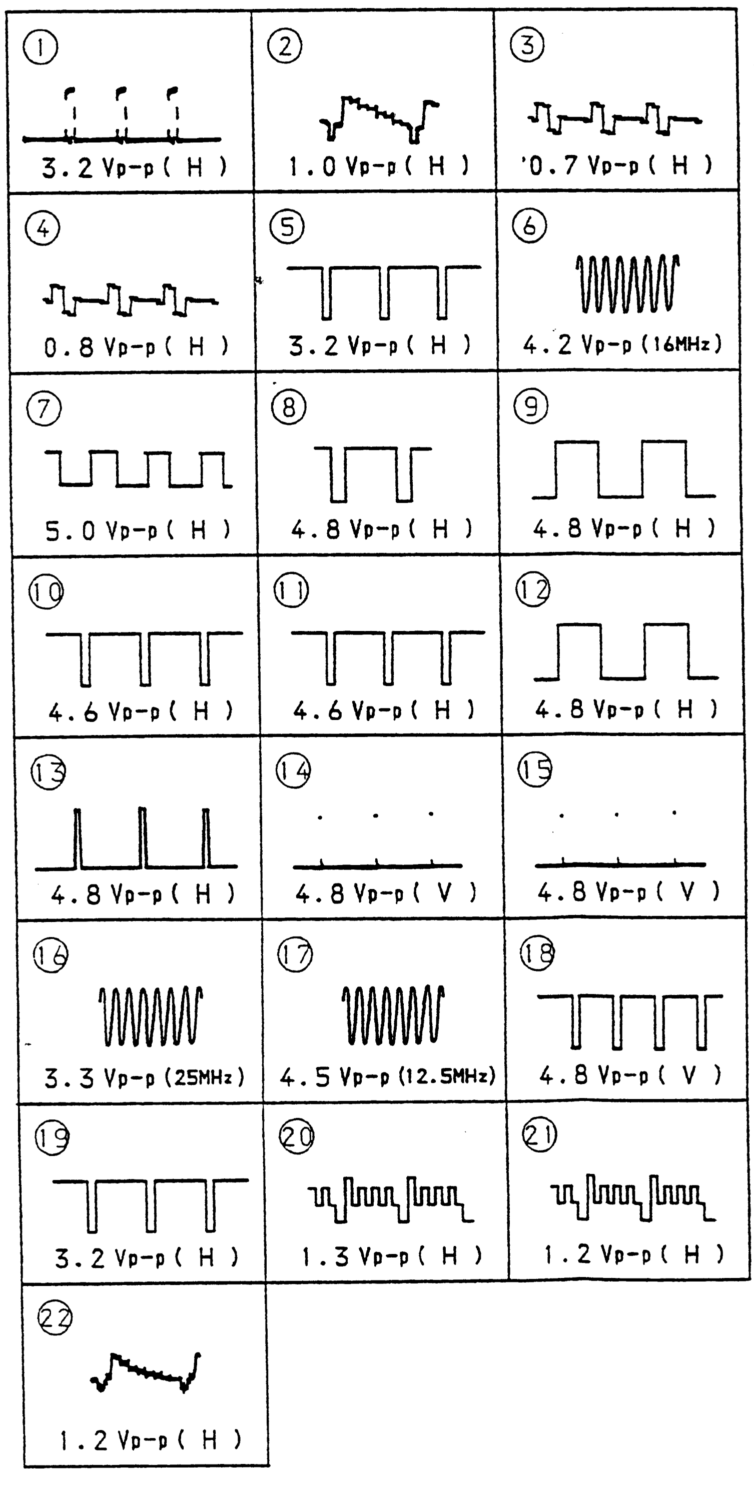
F
G
H
I
9V
AV-1 IN
AV-2 IN
AV-3 IN
MON/TV OUT
S
V
L/MONO
R
J901
J902
IC901
CXA1855S
AV SWICH
IC460
NJM4558M
AUDIO MIX
Q901 2SC2712 VIDE IO-SW
Q902 2SC2712 VIDE IO-SW
Q903 2SC2712 VIDE IO-SW
Q905 2SC2712 VIDEO-BUFF
Q906 2SA1037K VIDEO-BUFF
Q907 2SC2712 VIDEO-BUFF
Q908 2SC2712 C-BUFF
Q909 2SC2712 Y-BUFF
Q910 2SA1037K VIDEO BUFF
Q911 2SA1037K Y-BUFF
Q912 2SC2712 EQUALIZER
Q914 2SC2712 Y-BUFF
Q915 2SC2712 C-BUFF
Q916 DTC114EK MUTE
Q917 DTC114EK MUTE
Q918 2SA1037K POWER ON/OFF MUTE
Q420 2SC2712 VIDEO-BUFF
Q421 2SC2712 VIDEO-AMP
Q422 2SC2712 Y-BUFF
Q423 2SC2712 Y-AMP
Q424 2SC2712 C-BUFF
Q425 2SC2712 C-AMP
D931 DAZ04K MUTE
RD9.1ESB PROTECT
CN901 40P :BTOB-P
TO A (1/2) BOARD CN137
SCL
SDA
9V
S OUT C
GND
S OUT Y
COMB C IN
COMB Y IN
N.C
MON V OUT
MON C OUT
MON Y OUT
CHILD V OUT
SP R OUT
SP L OUT
TV R IN
TV L IN
MAIN TV IN
SUB TV IN
CN903 2P WHT-1 :S-MICRO
TO J SHIELD
CN902 10P WHT-1 :S-MICRO
FR R IN
FR L IN
FR Y IN
FR C IN
FR S SW
TO H4 BOARD CN1941
VIDEO
Y
C
3-394-919<DE.>-J..

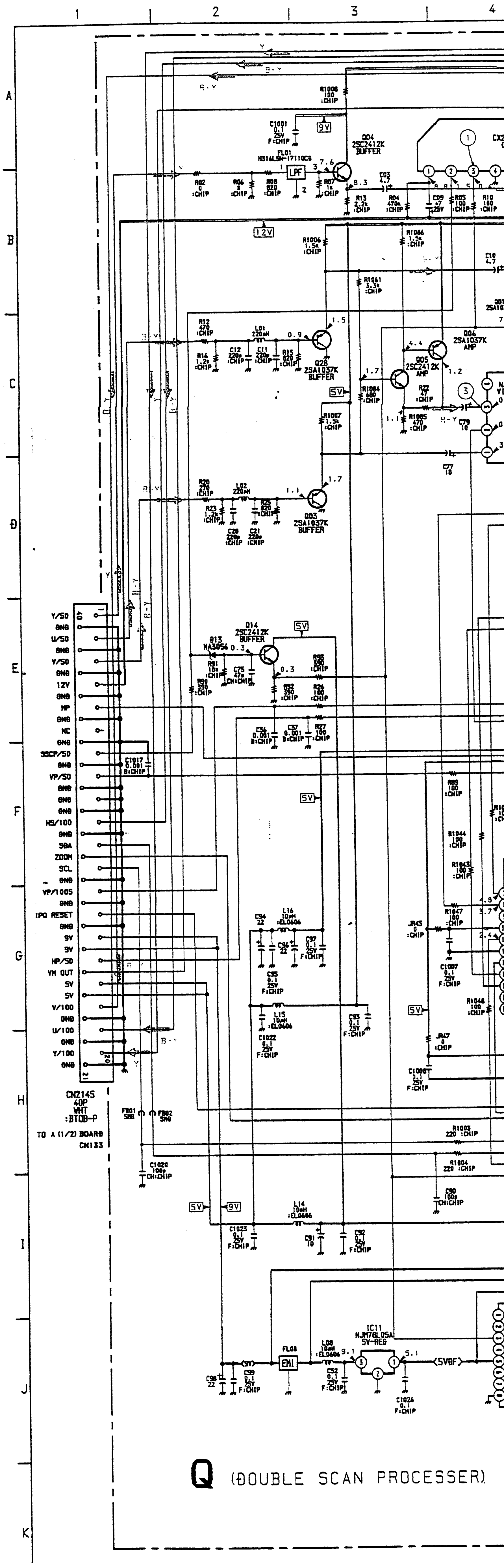
J (AUDIO/VIDEO SW, AUDIO/VIDEO IN/OUT.)

Q BOARD IC23 CX20125BM


8
7
6
5
BLK DET
AMP X1
APL DET
TRANSMISSON CORR
OUT BUFF
GAIN CONTROL
+
PEDESTAL CLAMP
COMPARATOR
Ref
BLK
BLK PEAK HOLD
LIMITER
1
2
3
4

• Q BOARD WAVEFORMS




1
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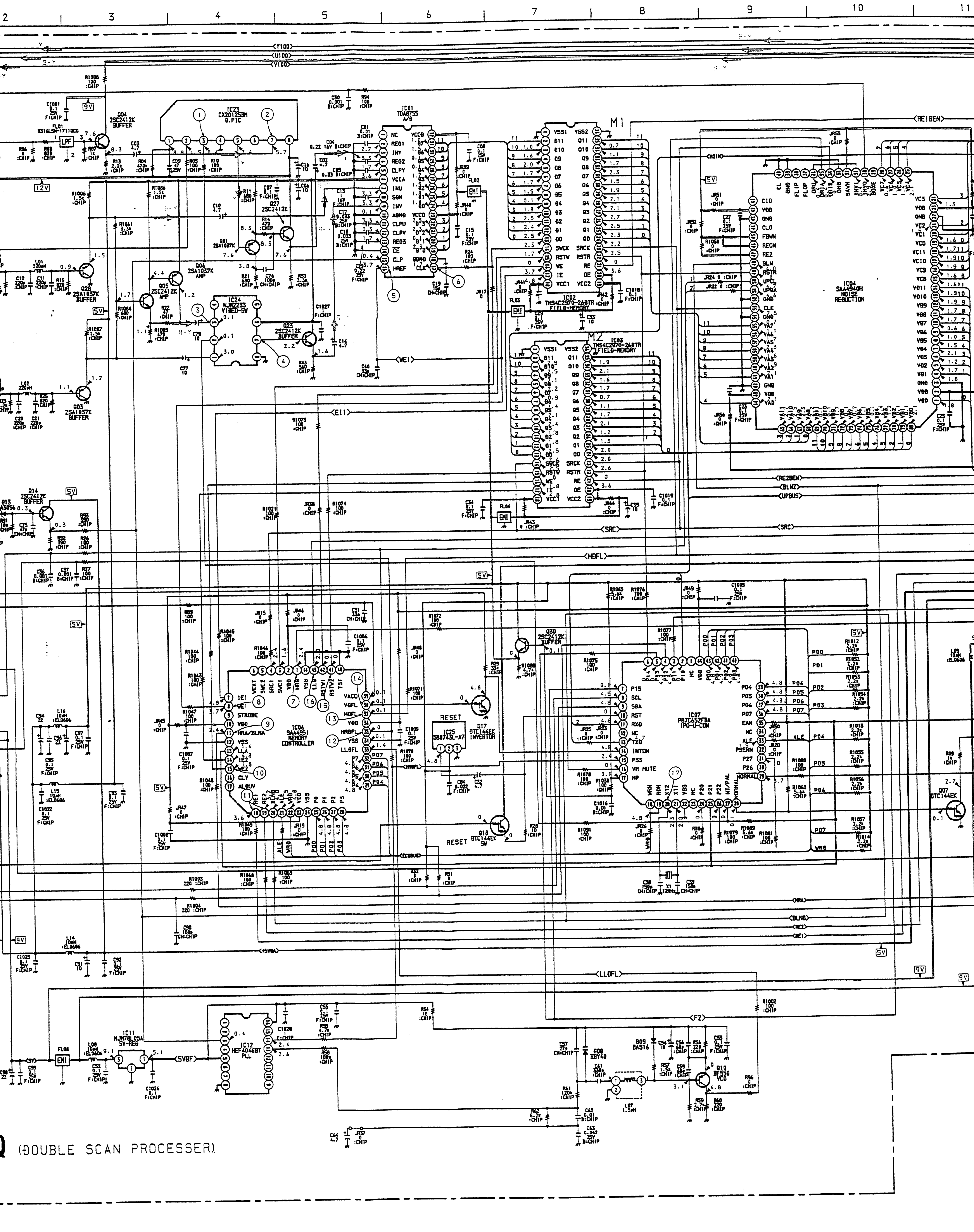
4
A
B
C
D
E
F
G
H
I
J
K
Y
B-Y
R-Y
12V
9V
5V
R1008 100 :CHIP
C1001 0.1 25V F:CHIP
FL01 H316LSH-1711DCB
LPF
Q04 2SC2412K BUFFER
R02 0 :CHIP
R06 0 :CHIP
R08 820 :CHIP
R07 1k :CHIP
R13 2.2k :CHIP
R04 470k :CHIP
C03 4.7
C09 47 25V
R05 100 :CHIP
R10 100 :CHIP
R1006 1.5k :CHIP
R1086 1.5k :CHIP
R1061 3.3k :CHIP
R12 470 :CHIP
L01 220nH
C12 220p :CHIP
C11 220p :CHIP
R15 820 :CHIP
R16 1.2k :CHIP
Q02 2SA1037K BUFFER
Q06 2SA1037K AMP
Q05 2SC2412K AMP
R1084 680 :CHIP
R22 47 :CHIP
R1007 1.5k :CHIP
R1085 470 :CHIP
C79 10
C77 10
R20 270 :CHIP
L02 220nH
R25 820 :CHIP
R23 1.2k :CHIP
C20 220p :CHIP
C21 220p :CHIP
Q03 2SA1037K BUFFER
Q14 2SC2412K BUFFER
D13 MA3056
R91 10k :CHIP
C75 47p :CHIP
R90 390 :CHIP
R93 390 :CHIP
R92 390 :CHIP
R26 100 :CHIP
C36 0.001 B:CHIP
C37 0.001 B:CHIP
R27 100 :CHIP
C1017 0.001 B:CHIP
Y/50
GND
U/50
V/50
12V
HP
NC
SSCP/50
VP/50
HS/100
SDA
ZOOM
SCL
VP/100S
IPQ RESET
9V
HP/50
VM OUT
5V
V/100
U/100
Y/100
40
1
20
21
CN2145 40P WHT :BTOB-P
TO A (1/2) BOARD CN133
FB01 SMD
FB02 SMD
C1020 100p CH:CHIP
R99 100 :CHIP
R1044 100 :CHIP
R1043 100 :CHIP
R1047 100 :CHIP
JR45 0 :CHIP
C1007 0.1 25V F:CHIP
R1048 100 :CHIP
JR47 0 :CHIP
C1008 0.1 25V F:CHIP
C34 22
L16 10uH :EL0606
C94 22
C97 0.1 25V F:CHIP
C35 0.1 25V F:CHIP
L15 10uH :EL0606
C1022 0.1 25V F:CHIP
C93 0.1 25V F:CHIP
R1003 220 :CHIP
R1004 220 :CHIP
C90 100p CH:CHIP
L14 10uH :EL0606
C1023 0.1 25V F:CHIP
C91 10
C92 0.1 25V F:CHIP
FL08 EMI
L08 10uH :EL0606
IC11 NJM78L05A 5V-REG
C98 22
C99 0.1 25V F:CHIP
C52 0.1 25V F:CHIP
C1026 0.1 F:CHIP
5V8F

Q (DOUBLE SCAN PROCESSER)



IC23 CX20125BM 8.PIC
IC01 TDA8755 A/D
IC02 TMS4C2970-26DTR FIELD-MEMORY
IC03 TMS4C2970-26DTR FIELD-MEMORY
IC04 SAA4940H NOISE REDUCTION
IC24 NJM2233 VIDEO-SW
IC06 SAA4951 MEMORY CONTROLLER
IC25 S80743L-A7 RESET
IC07 P87C652FBA IPQ-U-COM
IC11 NJM78L05A 5V-REG
IC12 HEF4046BT PLL
Q04 2SC2412K BUFFER
Q01 2SA1037K
Q27 2SC2412K
Q06 2SA1037K AMP
Q05 2SC2412K AMP
Q02 2SA1037K BUFFER
Q03 2SA1037K BUFFER
Q23 2SC2412K BUFFER
Q14 2SC2412K BUFFER
Q30 2SC2412K BUFFER
Q17 DTC144EK INVERTOR
Q18 DTC144EK 5V RESET
Q07 DTC144EK
Q10 BF550 VCO
D08 BBY40
D09 BAS16
FL01 H316LSN-17110CB LPF
X1 12MHz
M1
M2
<Y100>
<U100>
<V100>
<RE1BEN>
<WE1>
<EI1>
<REZBEN>
<BLNZ>
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<HDFL>
<HRA>
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<RE1>
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<F2>
<5VBF>
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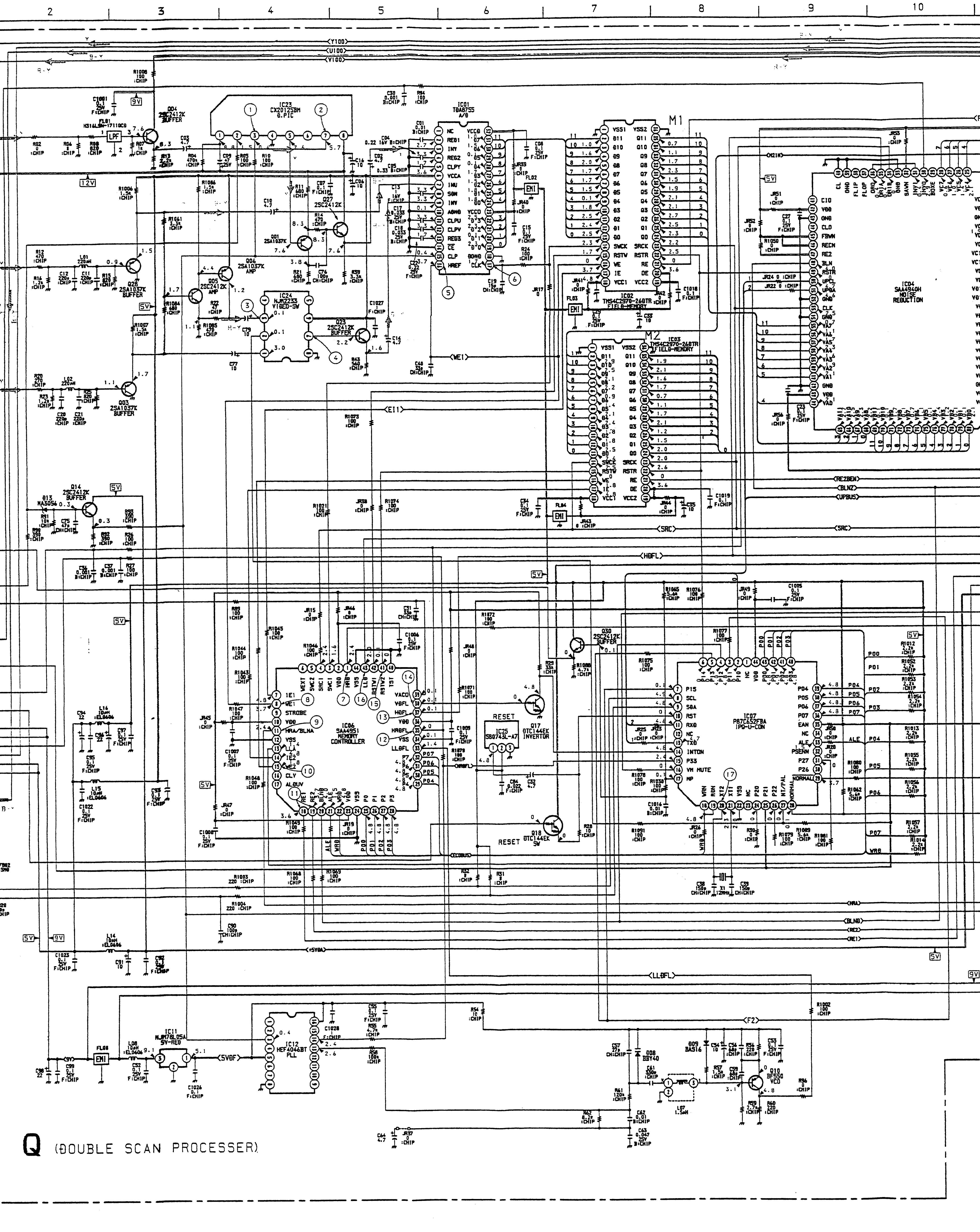
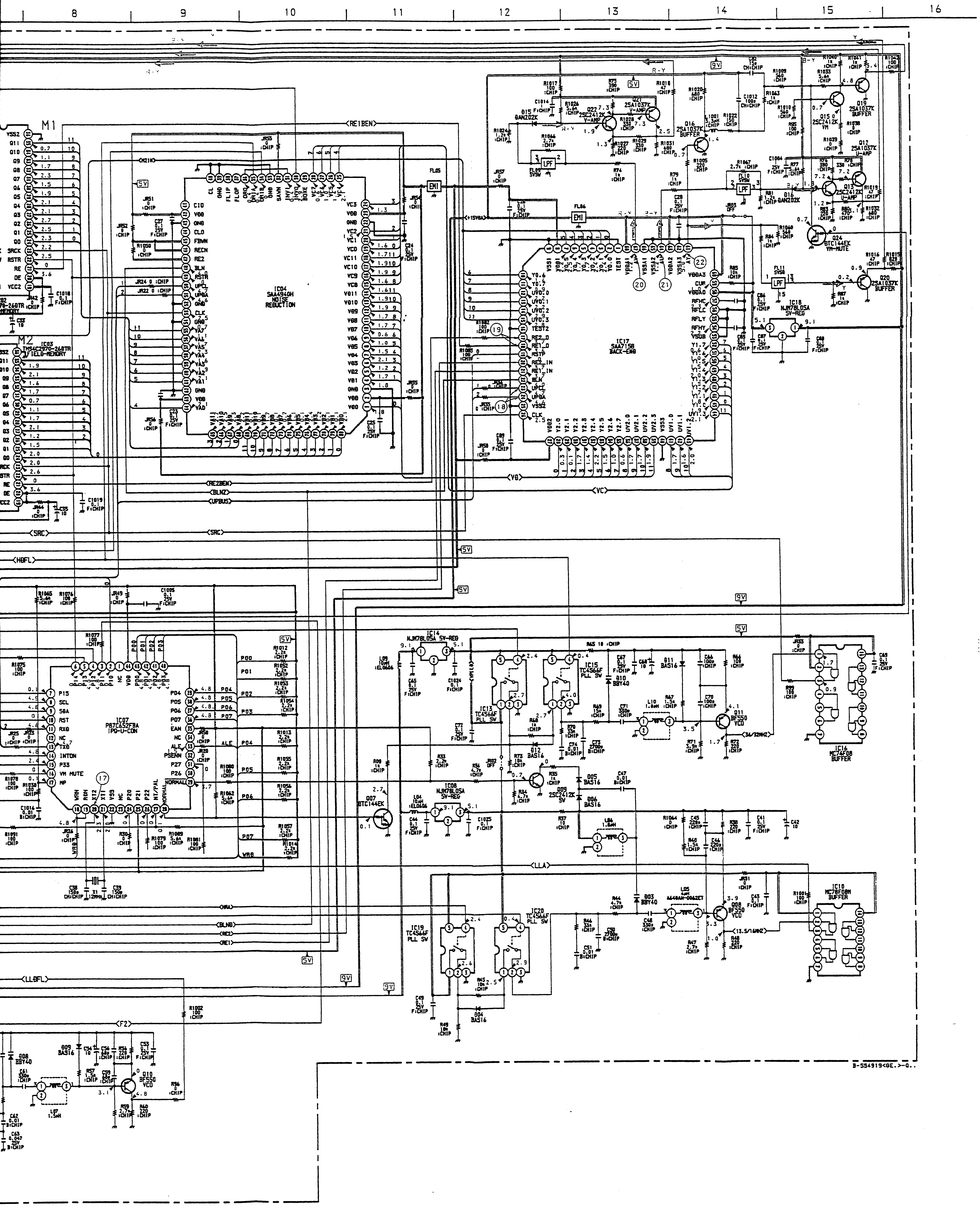
9V
12V
2
3
4
5
6
7
8
9
10
11

Q (DOUBLE SCAN PROCESSER)


IC23 CX20125BM 8.PIC
IC01 TDA8755 A/D
M1
IC02 THS4C2970-26DTR FIELD-MEMORY
M2
IC03 THS4C2970-26DTR FIELD-MEMORY
IC04 SAA4940H NOISE REDUCTION
IC24 NJM2233 VIDEO-SW
IC06 SAA4951 MEMORY CONTROLLER
IC25 S80743L-A7 RESET
Q17 DTC144EK INVERTOR
Q18 DTC144EK 5V RESET
IC07 P87C652FBA IPQ-U-CON
IC11 NJM78L05A 5V-REG
IC12 HEF4046BT PLL
Q10 BF550 VCO
Q04 2SC2412K BUFFER
Q26 2SA1037K BUFFER
Q03 2SA1037K BUFFER
Q14 2SC2412K BUFFER
Q05 2SC2412K AMP
Q06 2SA1037K AMP
Q23 2SC2412K BUFFER
Q30 2SC2412K BUFFER

Q (DOUBLE SCAN PROCESSER)



8
9
10
11
12
13
14
15
16
M1
M2
IC03
TMS4C2970-26BTR
FIELD-MEMORY
IC04
SAA4940H
NOISE
REDUCTION
IC17
SAA7158
BACK-END
IC07
P87C652FBA
IPQ-U-CON
IC14
NJM78L05A 5V-REG
IC08
NJM78L05A
5V-REG
IC18
NJM78L05A
5V-REG
IC13
TC4S66F
PLL SW
IC15
TC4S66F
PLL SW
IC19
TC4S66F
PLL SW
IC20
TC4S66F
PLL SW
IC16
MC74F08
BUFFER
IC10
MC74F08M
BUFFER
Q21
2SA1037K
V-AMP
Q22
2SC2412K
V-AMP
Q16
2SA1037K
BUFFER
Q19
2SA1037K
BUFFER
Q15
2SC2412K
VM
Q17
2SA1037K
U-AMP
Q13
2SC2412K
U-AMP
Q24
DTC144EK
VM-MUTE
Q20
2SA1037K
BUFFER
Q07
DTC144EK
Q09
2SC2412K
5V
Q11
BF550
VCO
Q08
BF550
VCO
Q10
BF550
VCO
D15
DAN202K
D16
DAN202K
D10
BBY40
D11
BAS16
D12
BAS16
D05
BAS16
D06
BAS16
D03
BBY40
D04
BAS16
D08
BBY40
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BAS16
FL05
FL06
FL09
5V5V
FL10
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LPF
EMI
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12MHz
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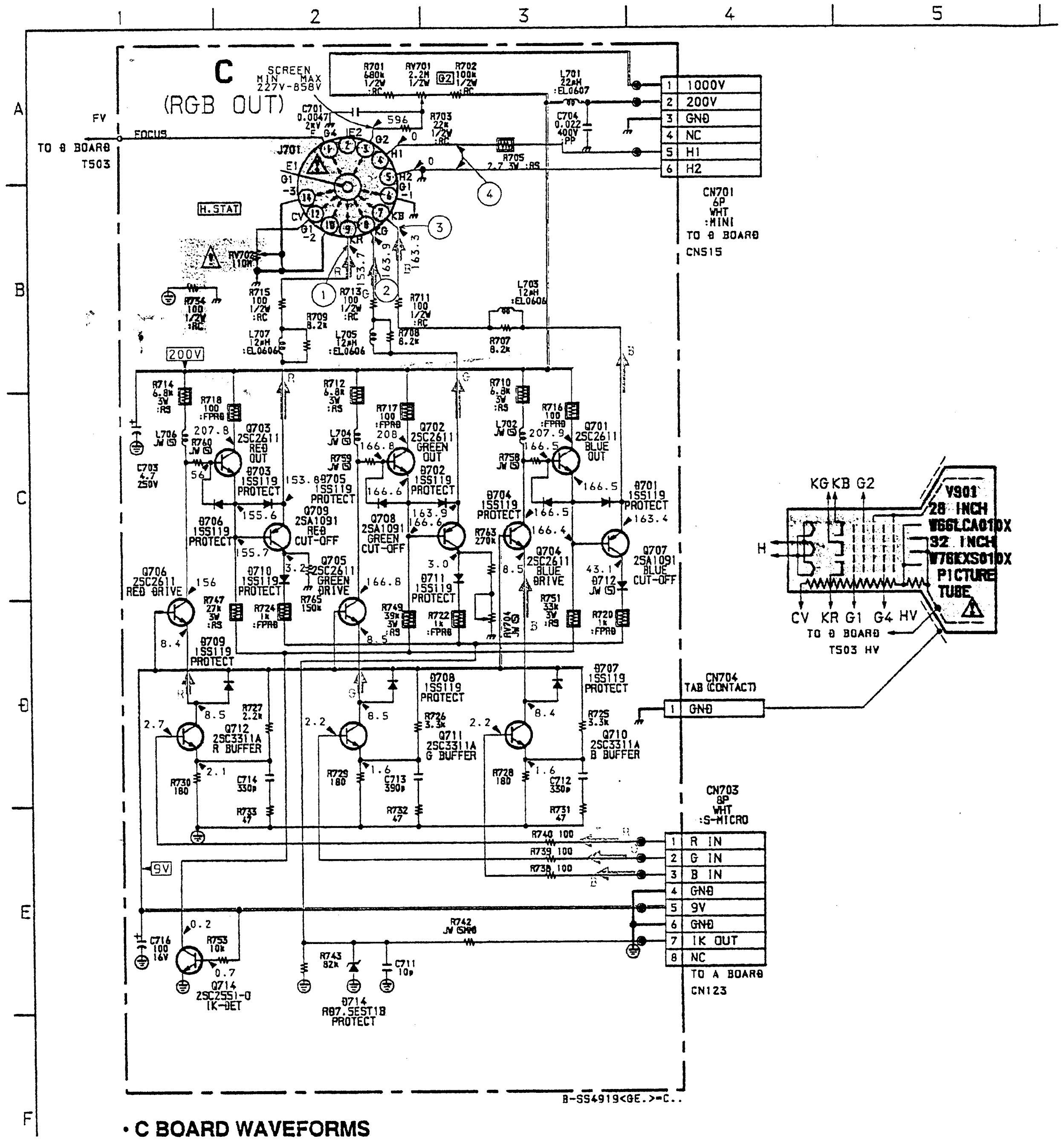
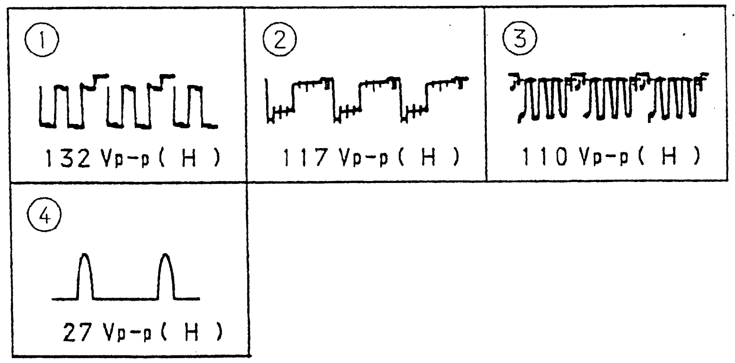
<UPBUS>
<SRC>
<HBFL>
<VB>
<VC>
<LLA>
<HRA>
<BLNG>
<RE2>
<RE1>
<LLBFL>
<F2>
<34/32MHZ>
<13.5/16MHZ>
5V
9V
R-Y
B-Y
Y
B-SS4919<GE.>-0..

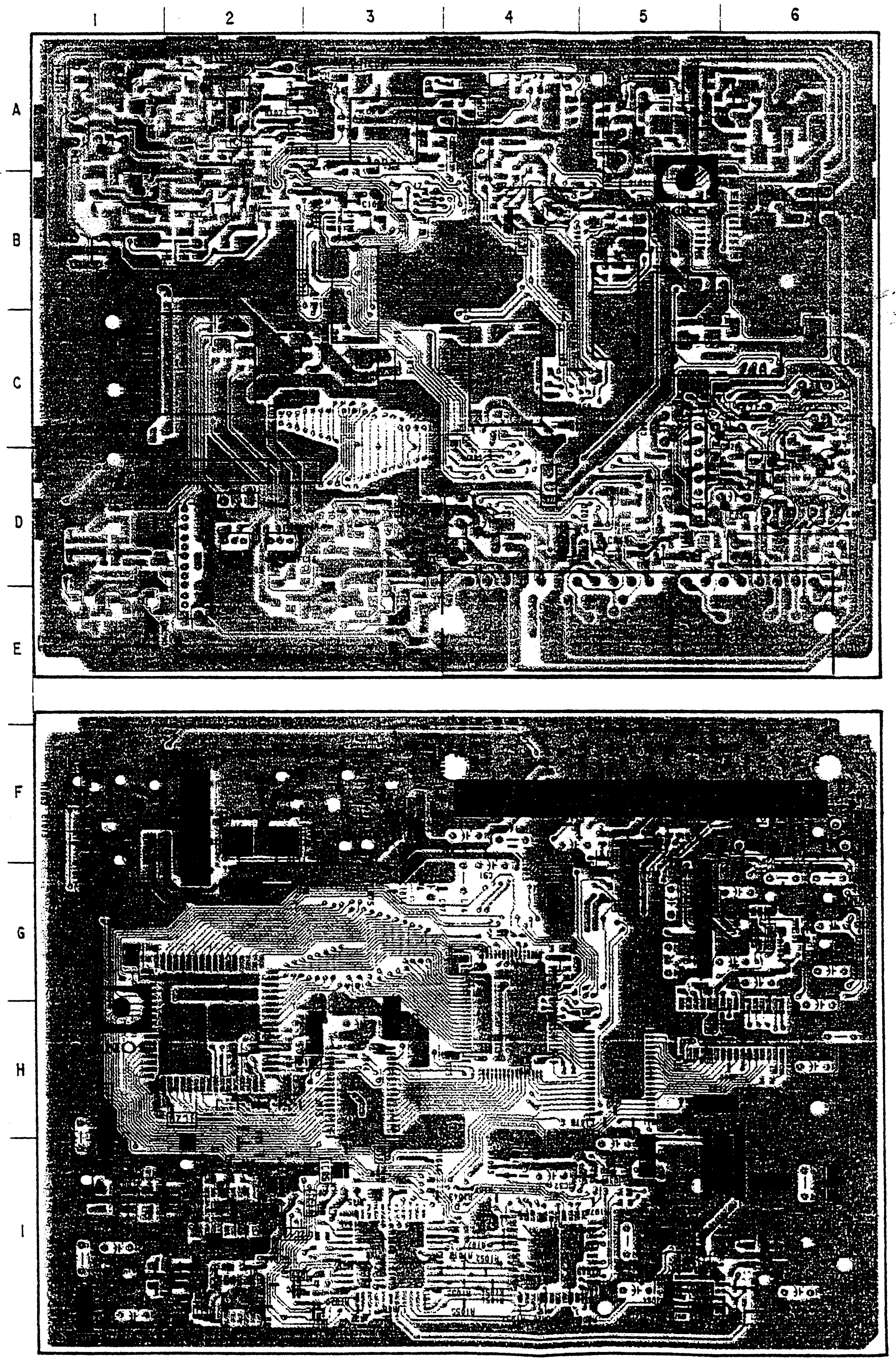
Q [DOUBLE SCAN PROCESSER] C [R. G. B OUT]


1
2
3
4
5
A
B
C
D
E
F
C
(RGB OUT)
SCREEN
MIN MAX
227V-858V
FV
FOCUS
TO 8 BOARD
T503
J701
H.STAT
RV702 110M
R701 680k 1/2W :RC
RV701 2.2M 1/2W
G2
R702 100k 1/2W :RC
C701 0.0047 2kV
R703 22k 1/2W :RC
R705 2.7 3W :RS
L701 22μH :EL0607
C704 0.022 400V :PP
1 1000V
2 200V
3 GND
4 NC
5 H1
6 H2
CN701 6P WHT :MINI
TO 8 BOARD
CN515
200V
R715 100 1/2W :RC
R713 100 1/2W :RC
R711 100 1/2W :RC
R754 100 1/2W :RC
R709 8.2k
R708 8.2k
R707 8.2k
L707 12μH :EL0606
L705 12μH :EL0606
L703 12μH :EL0606
153.7
163.9
163.3
R714 6.8k 3W :RS
R712 6.8k 3W :RS
R710 6.8k 3W :RS
R718 100 :FPRD
R717 100 :FPRD
R716 100 :FPRD
Q703 2SC2611 RED OUT
Q702 2SC2611 GREEN OUT
Q701 2SC2611 BLUE OUT
207.8
208
207.9
166.8
166.5
D703 1SS119 PROTECT
D705 1SS119 PROTECT
D702 1SS119 PROTECT
D704 1SS119 PROTECT
D701 1SS119 PROTECT
Q709 2SA1091 RED CUT-OFF
Q708 2SA1091 GREEN CUT-OFF
Q707 2SA1091 BLUE CUT-OFF
Q706 2SC2611 RED DRIVE
Q705 2SC2611 GREEN DRIVE
Q704 2SC2611 BLUE DRIVE
D706 1SS119 PROTECT
D710 1SS119 PROTECT
D711 1SS119 PROTECT
D709 1SS119 PROTECT
D708 1SS119 PROTECT
D707 1SS119 PROTECT
Q712 2SC3311A R BUFFER
Q711 2SC3311A G BUFFER
Q710 2SC3311A B BUFFER
C703 4.7 250V
5V
C716 100 16V
R753 10k
Q714 2SC2551-0 IK-DET
R743 82k
D714 RD7.5ESB1B PROTECT
C711 10p
R742 JW (5MM)
CN704 TAB (CONTACT)
1 GND
CN703 8P WHT :S-MICRO
1 R IN
2 G IN
3 B IN
4 GND
5 9V
6 GND
7 IK OUT
8 NC
TO A BOARD
CN123
KG KB G2
H
V901
28 INCH
W66LCA010X
32 INCH
W76EXS010X
PICTURE TUBE
CV KR G1 G4 HV
TO 8 BOARD
T503 HV
B-SS4919<GE.>=C..

• C BOARD WAVEFORMS



- Q BOARD -


1
2
3
4
5
6
A
B
C
D
E
F
G
H
I

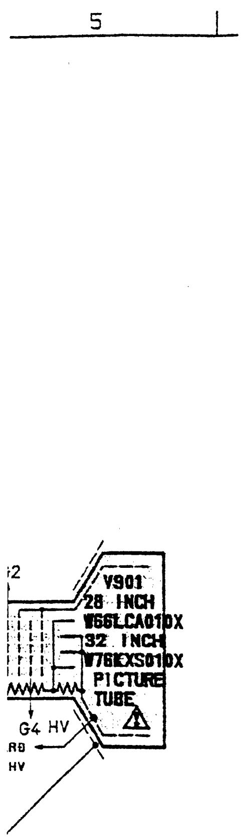
Q BOARD

IC	
IC01	C – 5
IC02	C – 5
IC03	B – 3
IC04	C – 4
IC06	A – 3
IC07	A – 4
IC08	B – 1, H – 1
IC11	B – 6, I – 6
IC12	I – 5
IC13	I – 2
IC14	A – 1, I – 1
IC15	I – 2
IC16	A – 2
IC17	C – 2
IC18	C – 3, H – 3
IC19	I – 2
IC20	I – 2
IC23	D – 5, G – 5
IC24	D – 6
IC25	B – 4

TRANSISTOR	
Q01	G – 5
Q03	G – 6
Q04	F – 6
Q05	G – 6
Q06	G – 6
Q07	I – 3
Q08	I – 2
Q09	I – 2

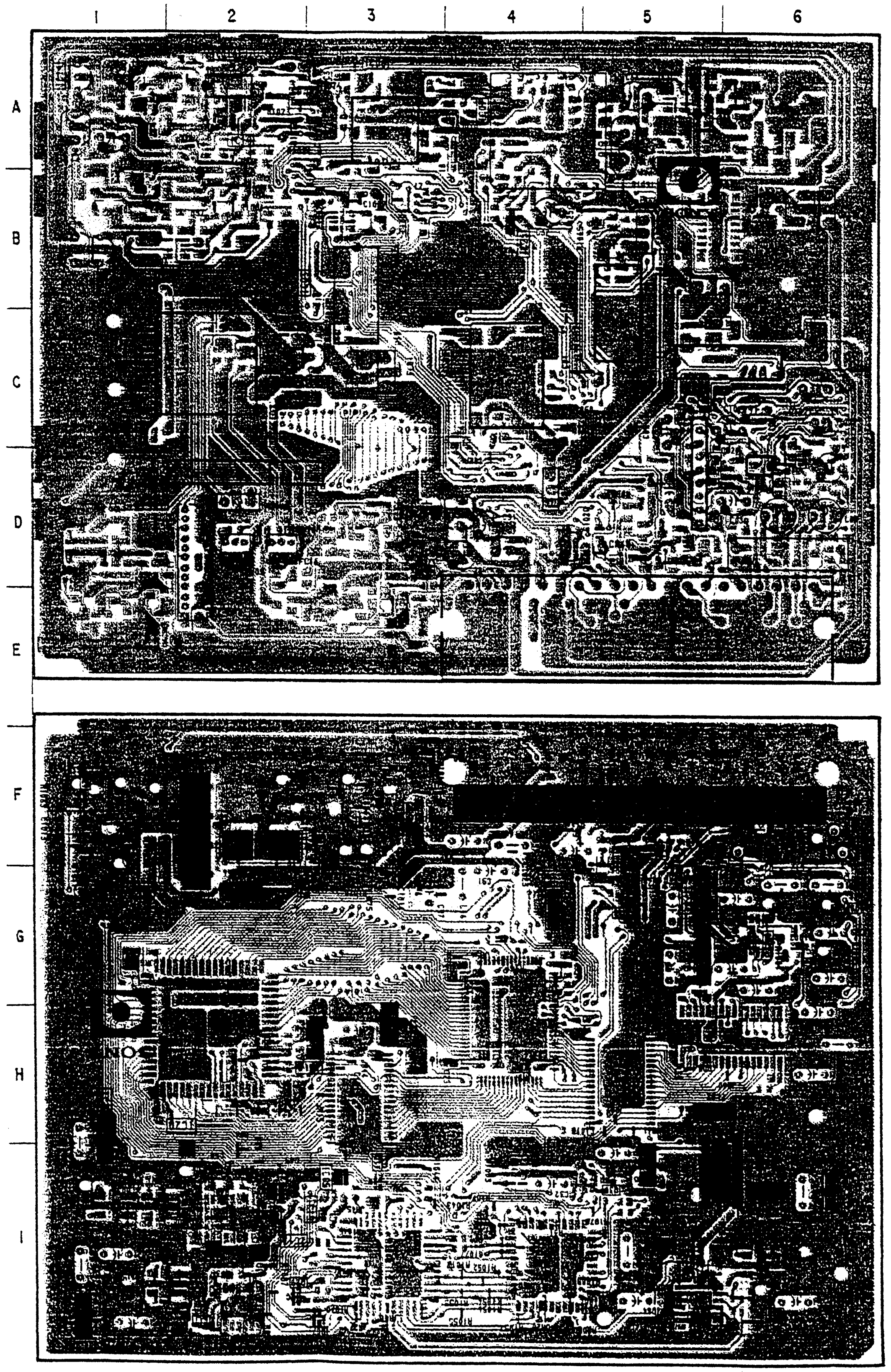
Note :

- ▨ :Pattern from the
- ▨ :Pattern of the re


5
VS01
28 INCH
W66LCA01DX
32 INCH
W76EXS01DX
PICTURE TUBE
G4
HV
HV

Q [DOUBLE SCAN PROCESSER] C [R. G. B OUT]

- Q BOARD -


1
2
3
4
5
6
A
B
C
D
E
F
G
H
I

Q BOARD

IC	
IC01	C - 5
IC02	C - 5
IC03	B - 3
IC04	C - 4
IC06	A - 3
IC07	A - 4
IC08	B - 1, H - 1
IC11	B - 6, I - 6
IC12	I - 5
IC13	I - 2
IC14	A - 1, I - 1
IC15	I - 2
IC16	A - 2
IC17	C - 2
IC18	C - 3, H - 3
IC19	I - 2
IC20	I - 2
IC23	D - 5, G - 5
IC24	D - 6
IC25	B - 4

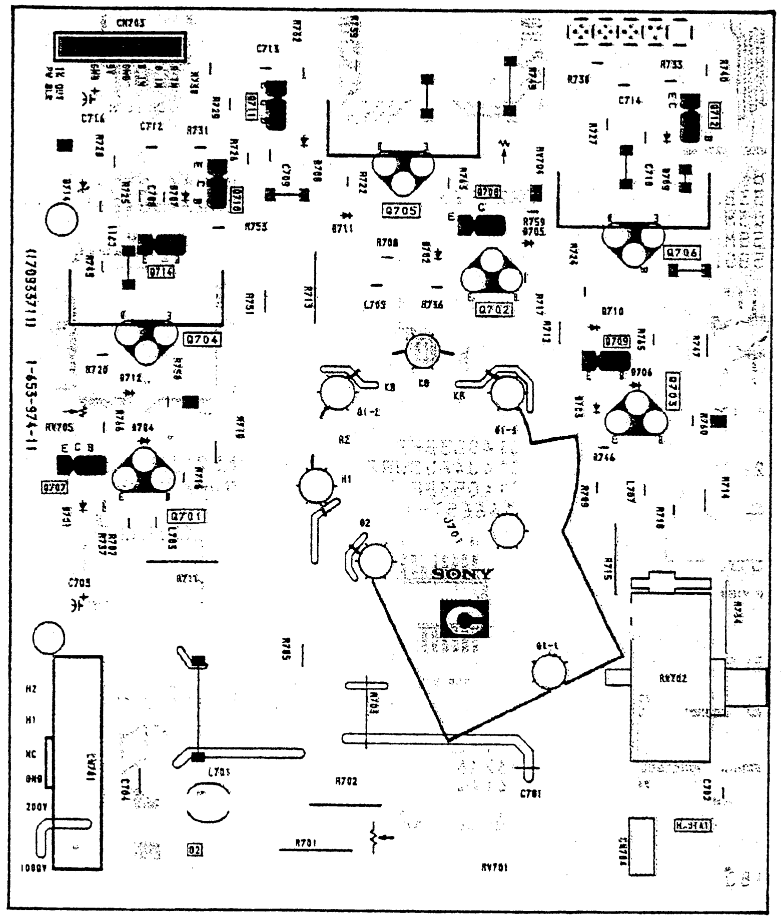
TRANSISTOR	
Q01	G - 5
Q03	G - 6
Q04	F - 6
Q05	G - 6
Q06	G - 6
Q07	I - 3
Q08	I - 2
Q09	I - 2
Q10	I - 6
Q11	I - 2
Q12	F - 3
Q13	F - 3
Q14	F - 5
Q15	F - 1
Q16	G - 1
Q17	I - 3
Q18	G - 5
Q19	F - 1
Q20	F - 3
Q21	F - 3
Q22	F - 3
Q23	D - 6
Q24	F - 1
Q27	G - 6
Q28	G - 6
Q30	I - 5

DIODE	
D03	I - 1
D04	I - 2
D05	I - 2
D06	I - 1
D08	I - 6
D09	I - 5
D10	I - 2
D11	I - 1
D12	I - 2
D13	F - 5
D15	F - 2
D16	F - 2

Note :

- ⋯ : Pattern from the side which enables seeing.
- ▨ : Pattern of the rear side.

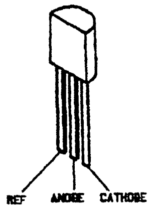
- C BOARD -


CN703
C713
C714
C712
R731
R733
R736
R755
Q705
Q714
Q704
Q702
Q706
Q703
Q707
Q701
C703
R705
R711
L703
L701
C701
R702
R701
RV701
RV702
RV705
SONY
C
1-653-974-11
(1703337)11
1000V
200V
H2
H1
HC
G4
G2
KR
KG
KB

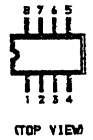
Schematic diagram
← C board

5-4. SEMICONDUCTORS

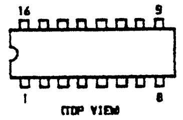
AN1431T


REF
ANODE
CATHODE

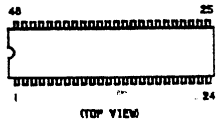
BA4558F
NJM2233BM
NJM2903M
NJM4558M-T2
µPC4558G2


8 7 6 5
1 2 3 4
(TOP VIEW)

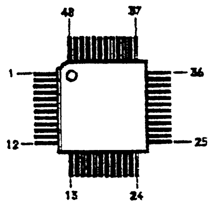
CXA1526P


16
9
1
8
(TOP VIEW)

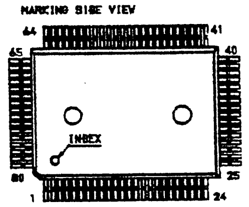
CXA1855S


48
25
1
24
(TOP VIEW)

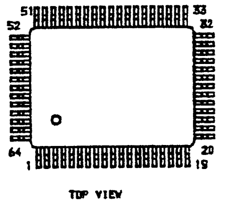
CXD2018Q


48
37
1
36
12
25
13
24

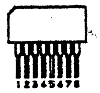
CXD2024Q


MARKING SIDE VIEW
64
41
65
40
INDEX
80
25
1
24

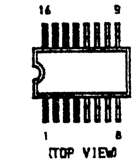
CXP8534A-SV4918


51
33
52
32
64
20
1
19
TOP VIEW

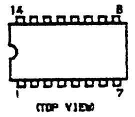
CX20125



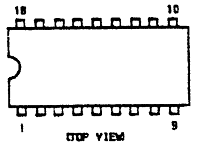
HD14053BFP
MC14046BDWRZ
MC14053BF
TDA4665T-T


16
9
1
8
(TOP VIEW)

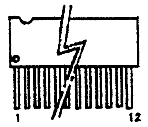
IR2112
LM324N
X24164SIC7000


14
8
1
7
(TOP VIEW)

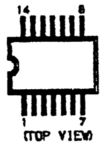
LA7856A
MC33025P
TDA2579B


18
10
1
9
(TOP VIEW)

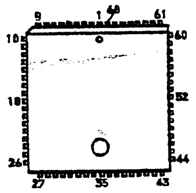
MB81C1000A-80PSZ



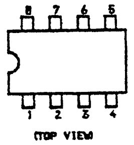
MC74F08M


14
8
1
7
(TOP VIEW)

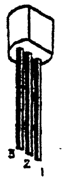
MSP3410TE-L
SAA7158WP-L


9
1
68
61
10
60
18
52
26
44
27
35
43

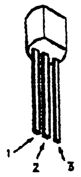
M5216P
NJM2903D


8 7 6 5
1 2 3 4
(TOP VIEW)

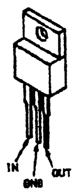
NJM78L05A



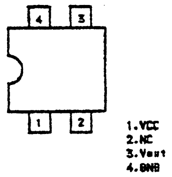
NJM78L08A



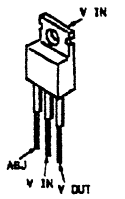
NJM78M09FA
NJM7809FA



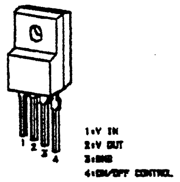
PC123F2


4
3
1
2
1.VCC
2.NC
3.Vout
4.GND

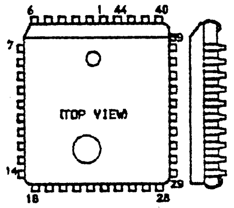
PQ05RH1


V IN
ADJ
V IN
V OUT

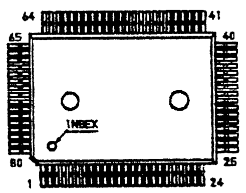
PQ12RE11
PQ12RF21


1
2
3
4
1:V IN
2:V OUT
3:GND
4:ON/OFF CONTROL

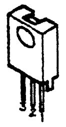
P83C652FBA-V3
/AB517
SAA4951/WP/VI-T
TPU3040TE-L


6
1
44
40
7
39
(TOP VIEW)
14
29
18
28

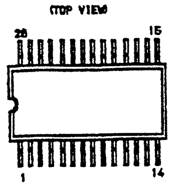
SAA4940H-T


MARKING SIDE VIEW
64
41
65
40
INDEX
80
25
1
24

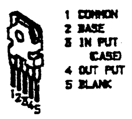
SBX-1790-11



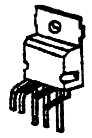
SDA9187-2XGEG
SDA9188-3XGEG
µPD6456GS-640-E2


(TOP VIEW)
28
15
1
14

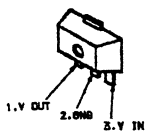
STR83159


1 COMMON
2 BASE
3 IN PUT (CASE)
4 OUT PUT
5 BLANK
12345

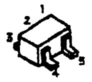
STV9379

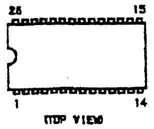


S-80743AL-A7-S

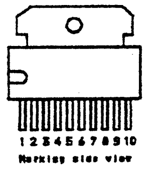

1.V OUT
2.GND
3.V IN

TDA4686
TC4S66F (TE85R)

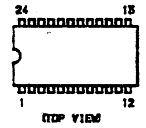



28
15
1
14
(TOP VIEW)

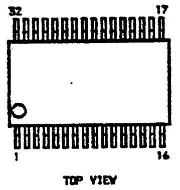
TDA7265


1 2 3 4 5 6 7 8 9 10
Marking side view

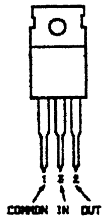
TDA8443B


24
13
1
12
(TOP VIEW)

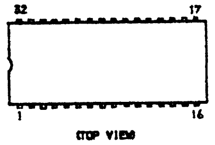
TDA8755T-T


32
17
1
16
TOP VIEW

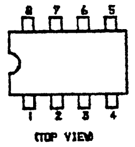
TDA9145/N2B


1 3 2
COMMON IN OUT

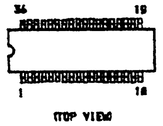
TDA9160A


32
17
1
16
(TOP VIEW)

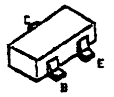
µPD358GR-E1


8 7 6 5
1 2 3 4
(TOP VIEW)

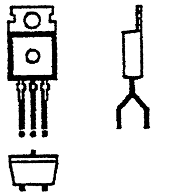
ZA2970-26DTR


36
19
1
18
(TOP VIEW)

BF550
DTA114EK
DTA114TK
DTC114EK
DTC124EK
DTC144EK
2SA1037K
2SA1162G
2SC2412K
2SC2712-YG



IRFIBC30G-LF



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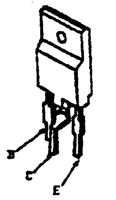

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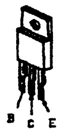
2SD2012



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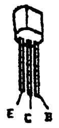
2SD2551



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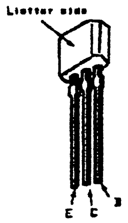
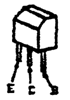
2SA1309A
2SC2785-HFE
2SC3311A


Letter side
E C B

2SB734-34
2SC3733
2SD774-34



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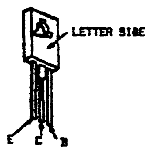
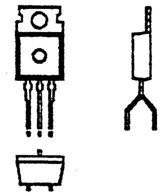
2SC2688-LK
2SC3840K


LETTER SIDE
E C B

2SC3997-YB



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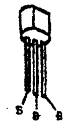
2SK940 (TPE6)



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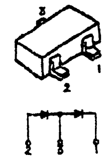
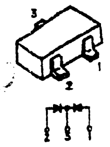
BBY40
DA204K
1SS226



DAN202K



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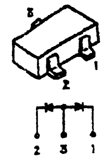
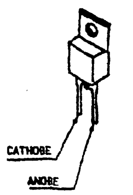
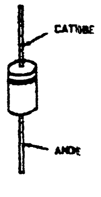


DD52RC

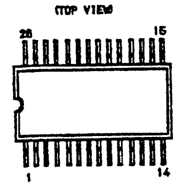

CATHODE
ANODE

D1NL20
EGP20G
EL1Z
GP08DPKG23
GP08D
RGP10GPKG2
RGP15GPKG2

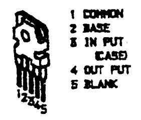

CATHODE
ANODE

D
E
M
R
R
R
R
R
R
F
F
1

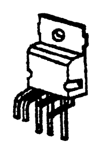
SDA9187-2XGEG
SDA9188-3XGEG
μPD6456GS-640-E2


(TOP VIEW)
28
15
1
14

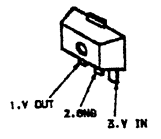
STR83159


1 COMMON
2 BASE
3 IN PUT (CASE)
4 OUT PUT
5 BLANK
1 2 3 4 5

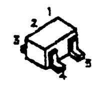
STV9379

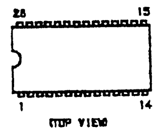


S-80743AL-A7-S

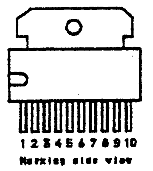

1.V OUT
2.GND
3.V IN

TDA4686
TC4S66F (TE85R)




28
15
1
14
(TOP VIEW)

TDA7265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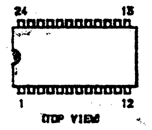
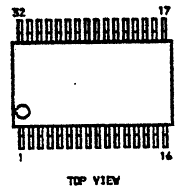
Marking side view

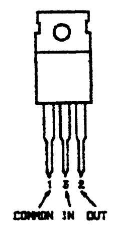
TDA8443B


24
13
1
12
(TOP VIEW)

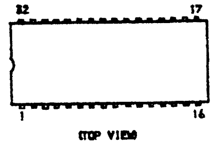
TDA8755T-T


32
17
1
16
TOP VIEW

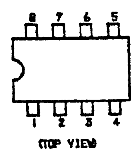
TDA9145/N2B


1 3 2
COMMON IN OUT

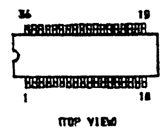
TDA9160A


32
17
1
16
(TOP VIEW)

μPD358GR-E1


8 7 6 5
1 2 3 4
(TOP VIEW)

ZA2970-26DTR


36
19
1
18
(TOP VIEW)

BF550
DTA114EK
DTA114TK
DTC114EK
DTC124EK
DTC144EK
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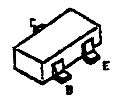
2SA1162G
2SC2412K
2SC2712-YG



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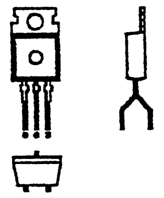

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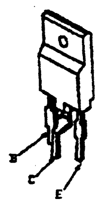

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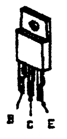
2SD2012



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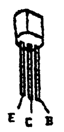
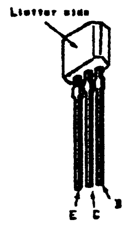
2SD2551



— 89 —

2SA1175-HFE
2SA1309A
2SC2785-HFE
2SC3311A


Letter side
E C B

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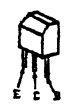
2SC3733
2SD774-34



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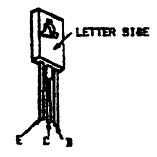
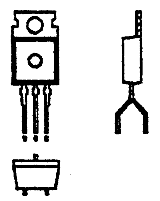
2SC2688-LK
2SC3840K


LETTER SIDE
E C B

2SC3997-YB



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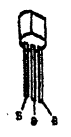
2SK940 (TPE6)



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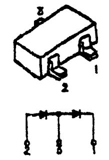
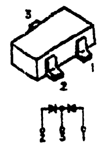
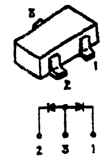


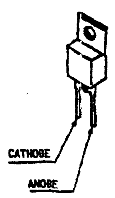
DAN202K



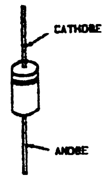
DAP202K



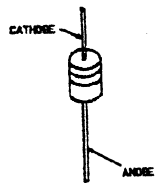
DD52RC


CATHODE
ANODE

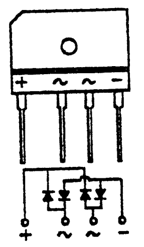
D1NL20
EGP20G
EL1Z
GP08DPKG23
GP08D
RGP10GPKG23
RGP15GPKG23


CATHODE
ANODE

D1N20R
ERA38-06
MTZJ-T-77-15
RD10ESB3
RD3.9ESB2
RD33ESB1
RD33F-B1
RD5.1ESB1
RD7.5ESB2
RD9.1ESB
RD9.1ESL
1SS119


CATHODE
ANODE

D4SB60L
RBA402L
RBA406B



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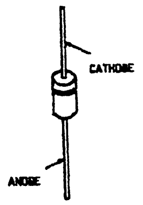
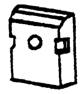
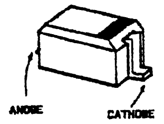
ERB24-06DTP1
RGP02-20EL-6394
S2LA20F


CATHODE
ANODE

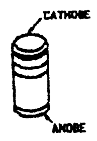
FMG-36S-LF024-104



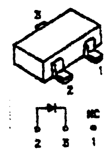
MA110


ANODE
CATHODE

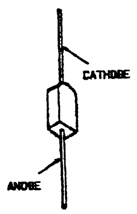
MA3051L-TX


CATHODE
ANODE

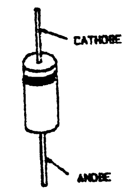
MA3047M-TX
MA3056
MA3068M
MA3075T
MA3180M-TX
MA3360-M
RD15M-B2
RD2.0MB
RD36M-B
RD5.1M-B2
RD5.6M-B2
RD6.8M-B2



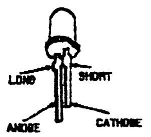
RM11C


CATHODE
ANODE

Ru-3AM


CATHODE
ANODE

TF541S (D102)
SEL1222R-C


LONG
SHORT
ANODE
CATHODE

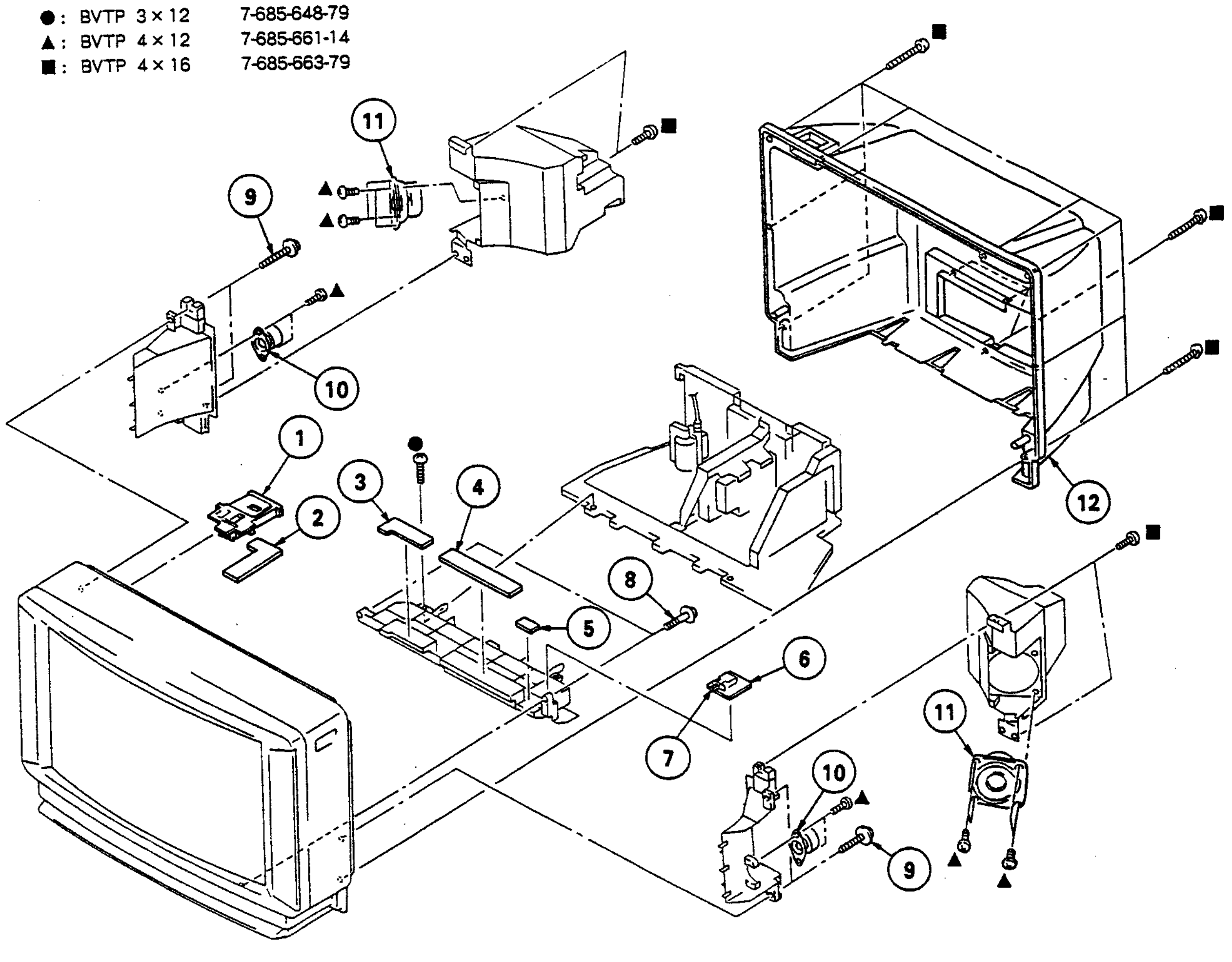
SECTION 6
EXPLODED VIEWS

NOTE :
- Items with on part number and on description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

6-1. REAR COVER AND SPEAKER (KV-W28MH11 / W28MN11)

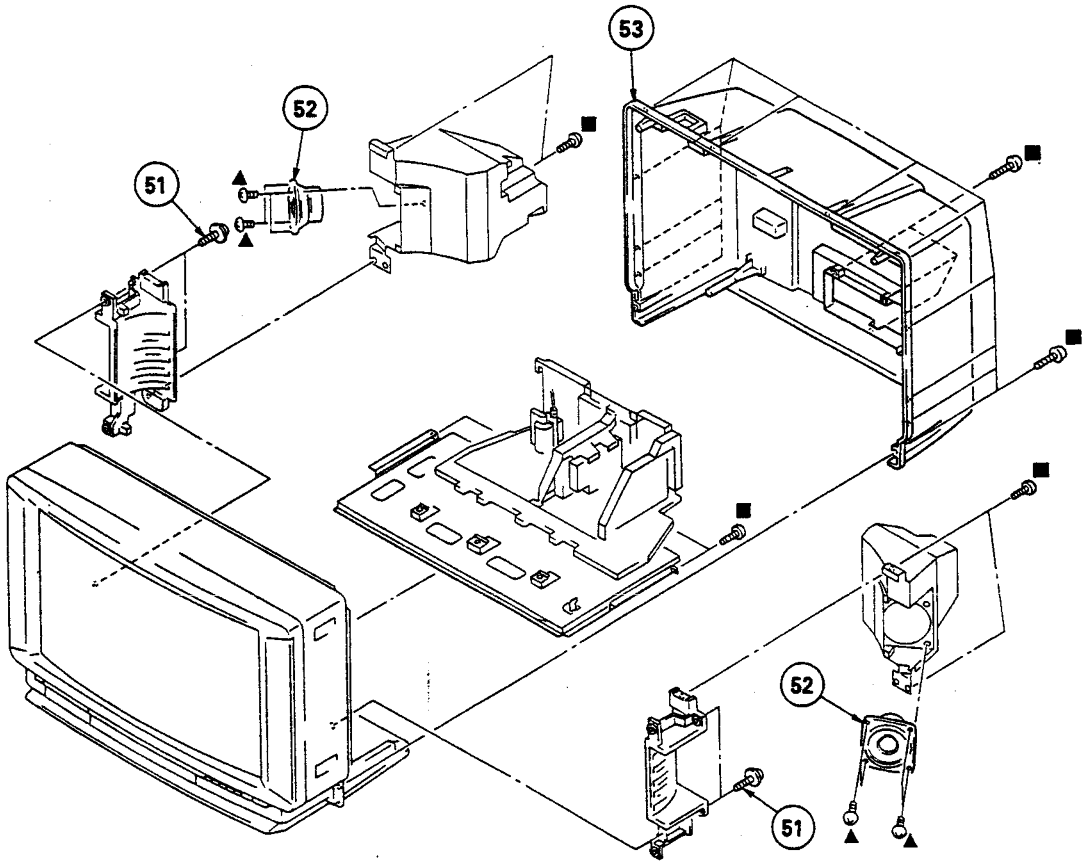
● :	BVTP 3 × 12	7-685-648-79
▲ :	BVTP 4 × 12	7-685-661-14
■ :	BVTP 4 × 16	7-685-663-79



REF.NO.	PART NO.	DESCRIPTION	REMARK
1	X-4032-292-1	BRACKET ASSY, H5	
2	*A-1372-075-A	H4 BOARD, COMPLETE (KV-W28MN11/MH11)	
3	*A-1372-068-A	H1 BOARD, COMPLETE (KV-W28MN11/MH11)	
4	*A-1372-069-A	H2 BOARD, COMPLETE (KV-W28MN11/MH11)	
5	*A-1372-067-A	H3 BOARD, COMPLETE (KV-W28MN11/MH11)	
6	*A-1241-173-A	F2 BOARD, COMPLETE	
7	⚠1-571-433-11	SWITCH, PUSH (AC POWER)	
8	4-319-520-11	SCREW, SPECIAL (+PW4X30)	
9	4-384-096-01	SCREW (4X16), TAPPING, +P	
10	1-504-121-51	SPEAKER (5CM)	
11	1-504-771-11	SPEAKER (12CM)	
12	4-042-194-21	COVER, REAR	

6-2. REAR COVER AND SPEAKER (KV-W32MH11 / W32MN11)

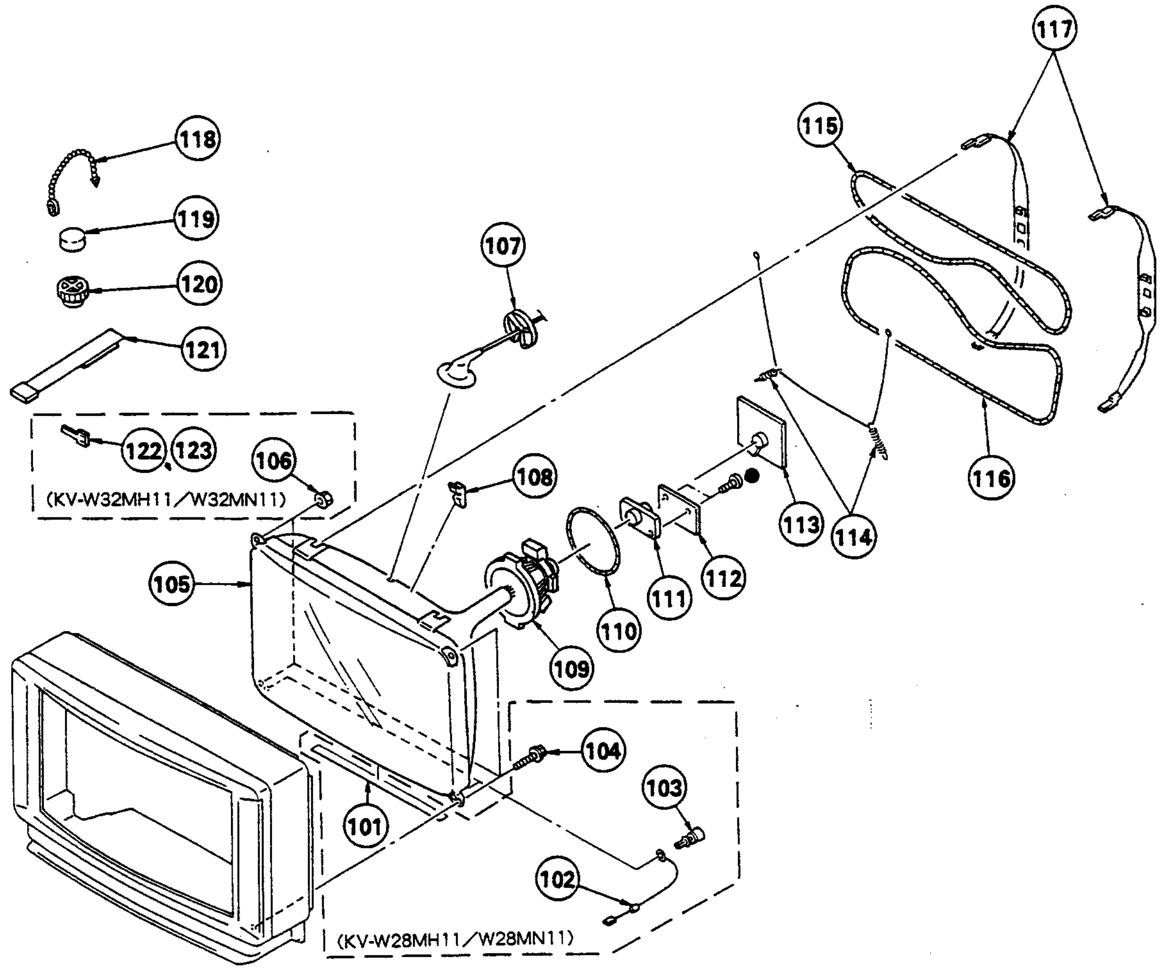
▲ : BVTP 4 × 12 7-685-661-14
■ : BVTP 4 × 16 7-685-663-79



REF. NO.	PART NO.	DESCRIPTION	REMARK
51	4-384-096-01	SCREW (4X16), TAPPING, +P	
52	1-504-771-11	SPEAKER (12CM)	
53	4-045-067-01	COVER, REAR	

6-3. PICTURE TUBE

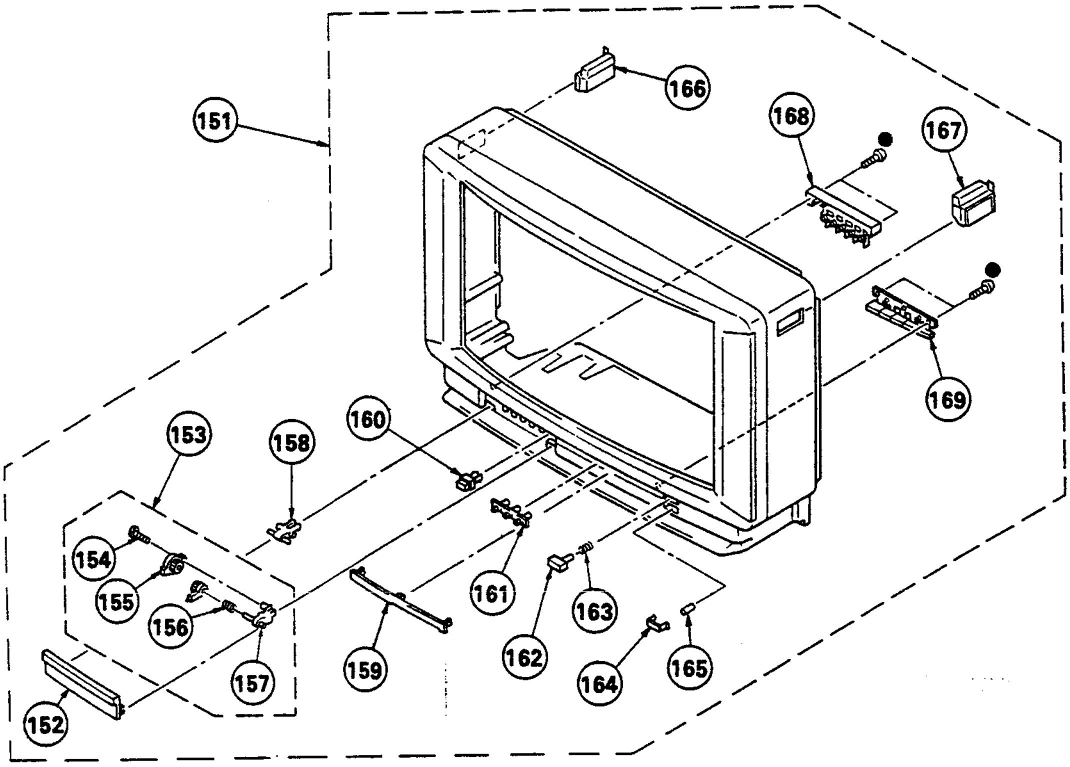
●: BVTP 3 × 12   7-685-648-79



REF.NO.	PART NO.	DESCRIPTION	REMARK
101	4-391-833-01	CLOTH, PROTECTION	(KV-W28MN11/MH11)
102	1-900-071-31	CONNECTOR ASSY	(KV-W28MN11/MH11)
103	4-386-618-01	RIVET, T TYPE	(KV-W28MN11/MH11)
104	4-390-505-01	SCREW (7), TAPPING	(KV-W28MN11/MH11)
105	⚠ 8-737-756-05	PICTURE TUBE 28CI1 (W66LCA010X)	(KV-W28MN11/MH11)
105	⚠ 8-735-023-05	PICTURE TUBE 32CI1 (W76KXS010X)	(KV-W32MN11/MH11)
106	4-387-204-01	NUT, SPECIAL, CRT	(KV-W32MN11/MH11)
107	*3-704-372-01	HOLDER, HV CABLE	
108	3-704-495-01	SPACER, DY	
109	⚠ 8-451-449-11	DY Y28CIC2(MTY)	(KV-W28MN11/MH11)
	⚠ 8-451-460-11	DY Y32CIC2M	(KV-W32MN11/MH11)
110	1-452-724-11	COIL, NA ROTATION (RT-165)	
111	⚠ 1-452-616-11	NECK ASSY, PICTURE TUBE (NA323)	
112	*A-1342-258-A	VM BOARD, COMPLETE	
113	*A-1331-391-A	C BOARD, COMPLETE	(KV-W28MN11/MH11)
	*A-1331-389-A	C BOARD, COMPLETE	(KV-W32MN11/MH11)
114	4-369-318-00	SPRING, TENSION	
115	⚠ 1-409-951-11	COIL, DEMAGNETIZATION	(KV-W28MN11/MH11)
	⚠ 1-409-953-11	COIL, DEMAGNETIZATION	(KV-W32MN11/MH11)
116	⚠ 1-409-952-11	COIL, DEMAGNETIZATION	(KV-W28MN11/MH11)
	⚠ 1-409-954-11	COIL, DEMAGNETIZATION	(KV-W32MN11/MH11)
117	*4-045-294-01	HOLDER, DGC	(KV-W32MN11/MH11)
	4-040-324-01	HOLDER, DGC	(KV-W28MN11/MH11)
118	4-308-870-00	CLIP, LEAD WIRE	
119	1-452-032-00	MAGNET,DISK; 10MMϕ	
120	1-452-094-00	MAGNET, ROTATABLE DISK; 15MMϕ	
121	X-4030-584-1	PERMALLOY ASSY, CORRECTION	(KV-W28MN11/MH11)
121	X-4306-312-0	PERMALLOY ASSY, CONVERGENCE	(KV-W32MN11/MH11)
122	4-034-272-01	PLATE, CORRECTION, TLV	(KV-W32MN11/MH11)
123	4-034-272-11	PLATE, CORRECTION, TLV	(KV-W32MN11/MH11)

6-4. CABINET (WITH BEZEL)
(KV-W28MH11 / W28MN11)

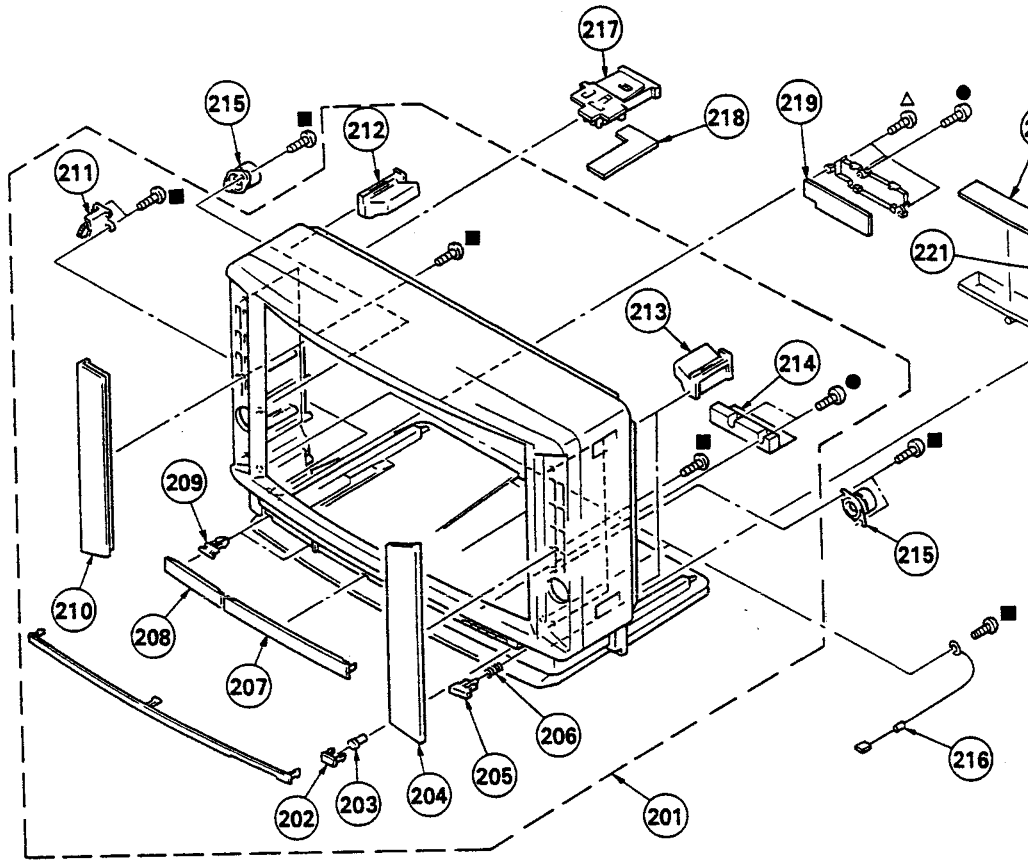
●: BVTP 3 × 12   7-685-648-79



REF.NO.	PART NO.	DESCRIPTION	REMARK
151	X-4032-291-1	BEZNET ASSY	152-169
152	4-042-193-41	DOOR	
153	X-4031-244-1	DAMPER ASSY	154-157
154	4-033-184-01	SCREW, SPECIAL	
155	4-036-880-11	DAMPER	
156	4-041-016-01	SPRING	
157	4-041-017-01	SHAFT (MAIN), DAMPER DOOR	
158	3-703-035-12	SHAFT, LID	
159	4-042-478-11	PANEL, CONTROL	
160	4-042-192-01	CATCHER, PUSH	
161	4-042-189-11	GUIDE, LIGHT	
162	4-042-187-21	BUTTON, POWER	
163	4-042-593-01	SPRING, COMPRESSION	
164	4-042-190-01	WINDOW, ORNAMENTAL	
165	*4-389-517-01	GUIDE (R), LIGHT	
166	4-037-968-03	HOLDER (L)	
167	4-037-969-03	HOLDER (R)	
168	4-042-186-01	BUTTON, SUB MENU	
169	4-042-185-01	BUTTON, MAIN MENU	

6-5. CABINET (WITH BEZEL) (KV-W32MH11 / W32MN11)

●: BVTP 3 × 12 7-685-648-79
■: BVTP 4 × 16 7-685-663-79
△: BV 3 × 25 7-685-152-19

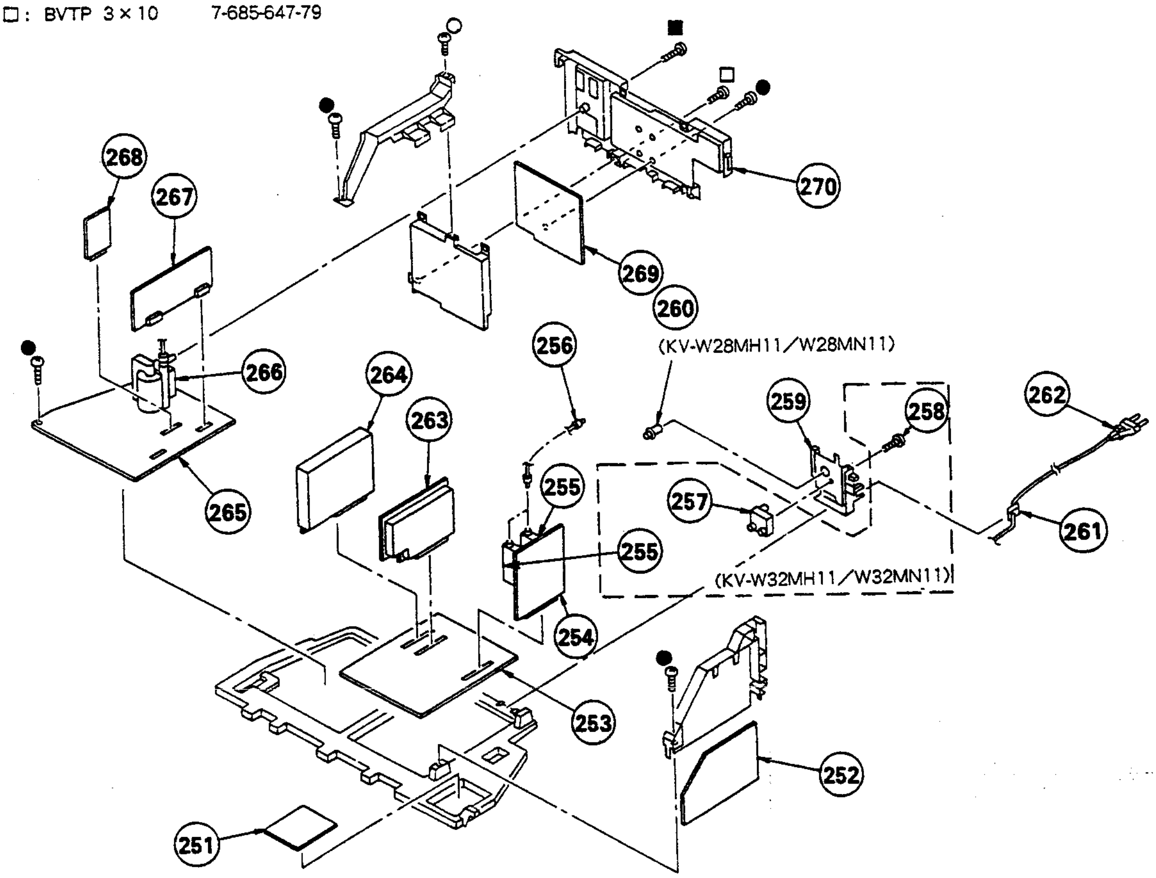


The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION	REMARK
201	X-4032-297-1	BEZNET ASSY	202-214
202	4-036-981-01	FILTER, RAY CATCHER	
203	4-042-927-01	GUIDE, LIGHT	
204	X-4032-296-1	GRILLE (R) ASSY, SPEAKER	
205	4-036-976-31	BUTTOM, POWER	
206	4-042-593-01	SPRING, COMPRESSION	
207	4-036-998-21	GRILLE, CENTER SP	
208	X-4032-294-1	DOOR ASSY	
209	3-703-035-12	SHAFT, LID	
210	X-4032-295-1	GRILLE (L) ASSY, SPEAKER	
211	4-036-990-01	DAMPER	
212	4-037-025-11	HOLDER (L)	
213	4-037-030-11	HOLDER (R)	
214	4-047-157-01	SUPPORTER	
215	1-504-121-51	SPEAKER (5CM)	
216	1-900-138-08	CONNECTOR ASSY	(KV-W32MN 11/MH11)
217	X-4032-292-1	BRACKET ASSY, H5	
218	*A-1372-073-A	H4 BOARD, COMPLETE	(KV-W32MN11/MH11)
219	*A-1372-070-A	H1 BOARD, COMPLETE	(KV-W32MN11/MH11)
220	*A-1372-071-A	H2 BOARD, COMPLETE	(KV-W32MN11/MH11)
221	*A-1372-072-A	H3 BOARD, COMPLETE	(KV-W32MN11/MH11)
222	*A-1241-173-A	F2 BOARD, COMPLETE	
223	⚠1-571-433-11	SWITCH, PUSH (AC POWER)	

6-6. CHASSIS

●: BVTP 3×12 7-685-648-79
■: BVTP 4×16 7-685-663-79
○: P 3×8 7-682-548-04
□: BVTP 3×10 7-685-647-79



The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION	REMARK
251	*A-1380-480-A	K BOARD, COMPLETE	(KV-W28MN11/MH11)
	*A-1380-478-A	K BOARD, COMPLETE	(KV-W32MN11/MH11)
252	*A-1241-174-A	F1 BOARD, COMPLETE	
253	*A-1297-418-A	A BOARD, COMPLETE	
254	*A-1297-417-A	A2 BOARD, COMPLETE	(KV-W28MN11/MH11)
	*A-1297-419-A	A2 BOARD, COMPLETE	(KV-W32MN11/MH11)
255	⚠8-598-270-00	TUNER, ET BTP-RG421	
256	*1-558-539-21	CABLE, P-P	(KV-W28MN11/MH11)
	*1-555-110-00	CABLE, P-P	(KV-W32MN11/MH11)
257	1-251-249-11	DISTRIBUTOR, RF	(KV-W32MN11/MH11)
258	4-379-611-01	SCREW (M3X8), +B	(KV-W32MN11/MH11)
259	4-046-739-11	BRACKET, SPLITTER	(KV-W28MN11/MH11)
	4-046-739-11	BRACKET, SPLITTER	(KV-W32MN11/MH11)
260	1-563-204-11	SOCKET, ANTENNA (PAL/SECAM)	(KV-W28MN11/MH11)
261	4-389-778-01	HOLDER, AC CORD	
262	⚠1-574-062-52	CORD, POWER (6.0A/250V)	(KV-W28MH11/W32MH11)
262	⚠1-696-401-11	CORD, POWER (6.0A/250V)	(KV-W28MN11/W32MN11)
263	*A-1135-807-A	B BOARD, COMPLETE	
264	*A-1275-126-A	Q BOARD, COMPLETE	
265	*A-1346-262-A	D BOARD, COMPLETE	(KV-W28MN11/MH11)
	*A-1346-266-A	D BOARD, COMPLETE	(KV-W32MN11/MH11)
266	X-4032-476-1	TRANSFORMER ASSY, FLYBACK (NX-3041/J1B)	
267	*A-1341-842-A	D1 BOARD, COMPLETE	(KV-W28MN11/MH11)
	*A-1341-850-A	D1 BOARD, COMPLETE	(KV-W32MN11/MH11)
268	*A-1346-265-A	D2 BOARD, COMPLETE	
269	*A-1388-176-A	J BOARD, COMPLETE	
270	4-046-735-01	BRACKET, J PC BOARD	

SECTION 7
ELECTRICAL PARTS LIST

B

NOTE :

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

RESISTORS
- All resistors are in ohms.
- F : nonflammable

When indicating parts by reference number, please include the board name.

CAPACITORS
- MF : μF, PF : μμF

COILS
- MMH : mH, UH : μH

- The components identified by ⊠ in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation.
Should replacement be required, replace only with the value originally used.

REF.NO.	PART NO.	DESCRIPTION		REMARK
	*A-1135-807-A	B BOARD, COMPLETE *****************		
	3-741-396-01	INSULATOR		
		<CAPACITOR>		
C1301	1-164-005-11	CERAMIC CHIP 0.47MF		25V
C1302	1-164-005-11	CERAMIC CHIP 0.47MF		25V
C1303	1-164-005-11	CERAMIC CHIP 0.47MF		25V
C1304	1-163-038-91	CERAMIC CHIP 0.1MF		25V
C1305	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1306	1-163-038-91	CERAMIC CHIP 0.1MF		25V
C1307	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1308	1-164-505-11	CERAMIC CHIP 2.2MF		16V
C1309	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1310	1-163-097-00	CERAMIC CHIP 15PF	5%	50V
C1311	1-163-097-00	CERAMIC CHIP 15PF	5%	50V
C1312	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
C1313	1-163-017-00	CERAMIC CHIP 0.0047MF	10%	50V
C1314	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
C1316	1-163-038-91	CERAMIC CHIP 0.1MF		25V
C1317	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C1318	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C1319	1-104-664-11	ELECT 47MF	20%	25V
C1320	1-163-038-91	CERAMIC CHIP 0.1MF		25V
C1321	1-163-239-11	CERAMIC CHIP 33PF	5%	50V
C1322	1-163-251-11	CERAMIC CHIP 100PF	5%	50V
C1323	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C1324	1-163-085-00	CERAMIC CHIP 2PF	0.25PF	50V
C1325	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C1326	1-163-121-00	CERAMIC CHIP 150PF	5%	50V
C1327	1-163-243-11	CERAMIC CHIP 47PF	5%	50V
C1328	1-163-243-11	CERAMIC CHIP 47PF	5%	50V
C1329	1-126-933-11	ELECT 100MF	20%	16V
C1330	1-163-038-91	CERAMIC CHIP 0.1MF		25V
C1331	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C1332	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C1333	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C1334	1-126-375-11	ELECT 100MF	20%	16V
C1335	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C1336	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C1337	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C1338	1-163-097-00	CERAMIC CHIP 15PF	5%	50V
C1339	1-164-005-11	CERAMIC CHIP 0.47MF		25V
C1340	1-163-038-91	CERAMIC CHIP 0.1MF		25V
C1341	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C1342	1-163-038-91	CERAMIC CHIP 0.1MF		25V
C1343	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C1344	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C1345	1-126-966-11	ELECT 33MF	20%	16V
C1346	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C1347	1-126-933-11	ELECT 100MF	20%	16V
C1348	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C1349	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C1350	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C1351	1-163-243-11	CERAMIC CHIP 47PF	5%	50V
C1352	1-124-126-00	ELECT 47MF	20%	16V
C1353	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C1354	1-163-237-11	CERAMIC CHIP 27PF	5%	50V
C1355	1-163-097-00	CERAMIC CHIP 15PF	5%	50V
C1356	1-124-126-00	ELECT 47MF	20%	16V
C1359	1-163-097-00	CERAMIC CHIP 15PF	5%	50V
C1360	1-163-038-91	CERAMIC CHIP 0.1MF		25V
C1361	1-164-346-11	CERAMIC CHIP 1MF		16V
C1362	1-163-131-00	CERAMIC CHIP 390PF	5%	50V
C1363	1-163-001-11	CERAMIC CHIP 220PF	10%	50V
C1364	1-163-251-11	CERAMIC CHIP 100PF	5%	50V
C1401	1-126-375-11	ELECT 100MF	20%	16V
C1402	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1403	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1404	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1405	1-164-005-11	CERAMIC CHIP 0.47MF		25V
C1407	1-124-126-00	ELECT 47MF	20%	16V
C1408	1-164-005-11	CERAMIC CHIP 0.47MF		25V
C1409	1-164-505-11	CERAMIC CHIP 2.2MF		16V
C1410	1-164-505-11	CERAMIC CHIP 2.2MF		16V
C1411	1-164-505-11	CERAMIC CHIP 2.2MF		16V
C1412	1-164-505-11	CERAMIC CHIP 2.2MF		16V
C1413	1-163-239-11	CERAMIC CHIP 33PF	5%	50V
C1414	1-163-239-11	CERAMIC CHIP 33PF	5%	50V
C1415	1-163-239-11	CERAMIC CHIP 33PF	5%	50V
C1417	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C1418	1-164-005-11	CERAMIC CHIP 0.47MF		25V
C1419	1-164-005-11	CERAMIC CHIP 0.47MF		25V
C1420	1-163-245-11	CERAMIC CHIP 56PF	5%	50V
C1421	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1422	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1423	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1424	1-163-251-11	CERAMIC CHIP 100PF	5%	50V
C1425	1-164-005-11	CERAMIC CHIP 0.47MF		25V
C1426	1-163-251-11	CERAMIC CHIP 100PF	5%	50V
C1431	1-163-235-11	CERAMIC CHIP 22PF	5%	50V
C1432	1-163-235-11	CERAMIC CHIP 22PF	5%	50V
C1433	1-163-243-11	CERAMIC CHIP 47PF	5%	50V
C1434	1-163-038-91	CERAMIC CHIP 0.1MF		25V
C1435	1-126-375-11	ELECT 100MF	20%	16V
C1436	1-126-375-11	ELECT 100MF	20%	16V
C1437	1-163-038-91	CERAMIC CHIP 0.1MF		25V
C1438	1-126-375-11	ELECT 100MF	20%	16V
C1439	1-126-933-11	ELECT 100MF	20%	16V
C1440	1-163-038-91	CERAMIC CHIP 0.1MF		25V

B

REF.NO.	PART NO.	DESCRIPTION		REMARK
C1441	1-163-038-91	CERAMIC CHIP 0.1MF		25V
C1442	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1443	1-164-005-11	CERAMIC CHIP 0.47MF		25V
C1444	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1445	1-164-005-11	CERAMIC CHIP 0.47MF		25V
C1446	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1447	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C1448	1-164-346-11	CERAMIC CHIP 1MF		16V
C1449	1-163-038-91	CERAMIC CHIP 0.1MF		25V
C1450	1-163-038-91	CERAMIC CHIP 0.1MF		25V
C1451	1-126-233-11	ELECT 22MF	20%	50V
C1452	1-163-038-91	CERAMIC CHIP 0.1MF		25V
C1453	1-163-038-91	CERAMIC CHIP 0.1MF		25V
C1454	1-163-121-00	CERAMIC CHIP 150PF	5%	50V
C1457	1-164-005-11	CERAMIC CHIP 0.47MF		25V
C1458	1-164-005-11	CERAMIC CHIP 0.47MF		25V
C1459	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C1460	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C1461	1-163-038-91	CERAMIC CHIP 0.1MF		25V
C1462	1-163-129-00	CERAMIC CHIP 330PF	5%	50V
C1463	1-163-129-00	CERAMIC CHIP 330PF	5%	50V
C1464	1-164-005-11	CERAMIC CHIP 0.47MF		25V
C1465	1-163-038-91	CERAMIC CHIP 0.1MF		25V
C1466	1-163-038-91	CERAMIC CHIP 0.1MF		25V
C1468	1-163-038-91	CERAMIC CHIP 0.1MF		25V
C1469	1-163-097-00	CERAMIC CHIP 15PF	5%	50V
C1470	1-163-097-00	CERAMIC CHIP 15PF	5%	50V
C1471	1-163-017-00	CERAMIC CHIP 0.0047MF	10%	50V
C1472	1-163-037-11	CERAMIC CHIP 0.022MF	10%	25V
C1473	1-163-038-91	CERAMIC CHIP 0.1MF		25V
C1474	1-164-346-11	CERAMIC CHIP 1MF		16V
C1475	1-163-017-00	CERAMIC CHIP 0.0047MF	10%	50V
C1476	1-124-903-11	ELECT 1MF	20%	50V
C1477	1-163-135-00	CERAMIC CHIP 560PF	5%	50V
C1478	1-126-375-11	ELECT 100MF	20%	16V
C1479	1-163-257-11	CERAMIC CHIP 180PF	5%	50V
C1480	1-104-664-11	ELECT 47MF	20%	25V
C1501	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1502	1-164-005-11	CERAMIC CHIP 0.47MF		25V
C1503	1-163-133-00	CERAMIC CHIP 470PF	5%	50V
C1504	1-136-481-11	FILM 0.0022MF	2%	50V
C1506	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1507	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1508	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C1509	1-163-011-11	CERAMIC CHIP 0.0015MF	10%	50V
C1514	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1515	1-126-163-11	ELECT 4.7MF	20%	50V
C1516	1-126-233-11	ELECT 22MF	20%	50V
C1517	1-126-387-11	ELECT 2.2MF	20%	50V
C1518	1-163-121-00	CERAMIC CHIP 150PF	5%	50V
C1519	1-126-375-11	ELECT 100MF	20%	16V
C1520	1-164-005-11	CERAMIC CHIP 0.47MF		25V

<CONNECTOR>

CN1301	1-695-301-11	CONNECTOR, BOARD TO BOARD 40P

<DIODE>

REF.NO.	PART NO.	DESCRIPTION	REMARK
D1301	8-719-401-41	DIODE MA3051L-TX	
D1302	8-719-914-43	DIODE DAN202K	
D1303	8-719-914-44	DIODE DAP202K	
D1304	8-719-914-43	DIODE DAN202K	
D1305	8-719-914-42	DIODE DA204K	
D1307	8-719-404-46	DIODE MA110	
D1309	8-719-404-46	DIODE MA110	
D1401	8-719-401-41	DIODE MA3051L-TX	
D1402	8-719-914-44	DIODE DAP202K	
D1501	8-719-401-41	DIODE MA3051L-TX	
D1502	8-719-106-17	DIODE RD6.8M-B2	

<FILTER>

FL1301	1-236-164-11	ENCAPSULATED COMPONENT
FL1302	1-239-848-21	FILTER, LOW PASS
FL1303	1-239-848-21	FILTER, LOW PASS
FL1304	1-239-848-21	FILTER, LOW PASS
FL1401	1-236-071-41	ENCAPSULATED COMPONENT
FL1402	1-236-071-41	ENCAPSULATED COMPONENT
FL1403	1-236-071-41	ENCAPSULATED COMPONENT
FL1404	1-236-071-41	ENCAPSULATED COMPONENT
FL1405	1-236-071-41	ENCAPSULATED COMPONENT
FL1406	1-236-071-41	ENCAPSULATED COMPONENT
FL1407	1-236-071-41	ENCAPSULATED COMPONENT

<IC>

IC1301	8-759-701-58	IC NJM78M08FA
IC1302	8-759-189-90	IC TDA9145/N2B
IC1303	8-759-288-85	IC TDA4665T-T
IC1304	8-752-352-21	IC CXD2024Q
IC1305	8-759-289-29	IC UPD6456GS-640-E2
IC1401	8-759-183-36	IC TDA8443B
IC1404	8-759-192-90	IC SDA9188-3XGEG
IC1405	8-759-248-15	IC SDA9187-2XGEG
IC1406	8-759-288-85	IC TDA4665T-T
IC1407	8-759-183-35	IC TDA9160A
IC1408	8-759-701-58	IC NJM78M08FA
IC1501	8-759-181-19	IC TDA2579B

<COIL>

L1302	1-408-406-00	INDUCTOR	5.6UH
L1303	1-408-401-00	INDUCTOR	2.2UH
L1304	1-408-405-00	INDUCTOR	4.7UH
L1305	1-408-405-00	INDUCTOR	4.7UH
L1306	1-408-405-00	INDUCTOR	4.7UH
L1307	1-408-609-41	INDUCTOR	33UH
L1401	1-408-418-00	INDUCTOR	56UH
L1402	1-408-418-00	INDUCTOR	56UH

<TRANSISTOR>

Q1301	8-729-216-22	TRANSISTOR 2SA1162-G
Q1302	8-729-216-22	TRANSISTOR 2SA1162-G
Q1303	8-729-901-01	TRANSISTOR DTC144EK
Q1304	8-729-901-00	TRANSISTOR DTC124EK
Q1305	8-729-216-22	TRANSISTOR 2SA1162-G
Q1306	8-729-920-74	TRANSISTOR 2SC2412K-QR
Q1307	8-729-920-74	TRANSISTOR 2SC2412K-QR
Q1308	8-729-920-74	TRANSISTOR 2SC2412K-QR
Q1309	8-729-216-22	TRANSISTOR 2SA1162-G
Q1310	8-729-216-22	TRANSISTOR 2SA1162-G
Q1311	8-729-216-22	TRANSISTOR 2SA1162-G
Q1312	8-729-216-22	TRANSISTOR 2SA1162-G
Q1314	8-729-216-22	TRANSISTOR 2SA1162-G
Q1315	8-729-216-22	TRANSISTOR 2SA1162-G

REF.NO.	PART NO.	DESCRIPTION	REMARK
Q1316	8-729-216-22	TRANSISTOR 2SA1162-G	
Q1317	8-729-216-22	TRANSISTOR 2SA1162-G	
Q1318	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q1319	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q1320	8-729-216-22	TRANSISTOR 2SA1162-G	
Q1323	8-729-901-01	TRANSISTOR DTC144EK	
Q1324	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q1325	8-729-216-22	TRANSISTOR 2SA1162-G	
Q1326	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q1401	8-729-900-53	TRANSISTOR DTC114EK	
Q1402	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q1403	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q1404	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q1405	8-729-216-22	TRANSISTOR 2SA1162-G	
Q1407	8-729-216-22	TRANSISTOR 2SA1162-G	
Q1408	8-729-216-22	TRANSISTOR 2SA1162-G	
Q1409	8-729-216-22	TRANSISTOR 2SA1162-G	
Q1410	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q1411	8-729-901-01	TRANSISTOR DTC144EK	
Q1412	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q1413	8-729-900-53	TRANSISTOR DTC114EK	
Q1414	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q1415	8-729-216-22	TRANSISTOR 2SA1162-G	
Q1416	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q1417	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q1418	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q1421	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q1422	8-729-216-22	TRANSISTOR 2SA1162-G	
Q1423	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q1424	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q1425	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q1501	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q1502	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q1505	8-729-901-04	TRANSISTOR DTA114EK	
Q1506	8-729-900-53	TRANSISTOR DTC114EK	
Q1507	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q1508	8-729-900-53	TRANSISTOR DTC114EK	
		<RESISTOR>	
R1301	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R1302	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R1303	1-216-039-00	METAL GLAZE 390 5% 1/10W	
R1304	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
R1305	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R1306	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R1307	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R1308	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R1309	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R1310	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R1311	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R1312	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R1313	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R1315	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R1316	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R1317	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R1318	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R1320	1-216-035-00	METAL GLAZE 270 5% 1/10W	
R1321	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R1322	1-216-063-00	METAL GLAZE 3.9K 5% 1/10W	
R1323	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R1324	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R1325	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R1326	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R1327	1-216-083-00	METAL GLAZE 27K 5% 1/10W	
R1328	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R1330	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W	
R1332	1-216-071-00	METAL GLAZE 8.2K 5% 1/10W	
R1333	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R1334	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R1335	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W	
R1336	1-216-043-00	METAL GLAZE 560 5% 1/10W	
R1337	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
R1338	1-216-043-00	METAL GLAZE 560 5% 1/10W	
R1339	1-216-067-00	METAL GLAZE 5.6K 5% 1/10W	
R1340	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R1341	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R1342	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R1343	1-216-055-00	METAL GLAZE 1.8K 5% 1/10W	
R1344	1-216-295-00	CONDCTOR, CHIP	
R1345	1-216-295-00	CONDCTOR, CHIP	
R1347	1-216-295-00	CONDCTOR, CHIP	
R1349	1-216-657-11	METAL CHIP 1.8K 0.50% 1/10W	
R1350	1-216-663-11	METAL CHIP 3.3K 0.50% 1/10W	
R1351	1-216-657-11	METAL CHIP 1.8K 0.50% 1/10W	
R1352	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R1353	1-216-067-00	METAL GLAZE 5.6K 5% 1/10W	
R1354	1-216-035-00	METAL GLAZE 270 5% 1/10W	
R1357	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R1358	1-216-067-00	METAL GLAZE 5.6K 5% 1/10W	
R1359	1-216-043-00	METAL GLAZE 560 5% 1/10W	
R1360	1-216-055-00	METAL GLAZE 1.8K 5% 1/10W	
R1361	1-216-637-11	METAL CHIP 270 0.50% 1/10W	
R1362	1-216-635-11	METAL CHIP 220 0.50% 1/10W	
R1363	1-216-295-00	CONDCTOR, CHIP	
R1364	1-216-037-00	METAL GLAZE 330 5% 1/10W	
R1365	1-216-067-00	METAL GLAZE 5.6K 5% 1/10W	
R1366	1-216-043-00	METAL GLAZE 560 5% 1/10W	
R1367	1-216-039-00	METAL GLAZE 390 5% 1/10W	
R1368	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R1369	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R1370	1-216-079-00	METAL GLAZE 18K 5% 1/10W	
R1371	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R1372	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W	
R1373	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R1374	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R1375	1-216-666-11	METAL CHIP 4.3K 0.50% 1/10W	
R1376	1-208-784-11	METAL CHIP 1.2K 0.50% 1/10W	
R1377	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R1378	1-216-295-00	CONDCTOR, CHIP	
R1380	1-216-035-00	METAL GLAZE 270 5% 1/10W	
R1381	1-216-027-00	METAL GLAZE 120 5% 1/10W	
R1384	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R1385	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W	
R1386	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R1387	1-216-115-00	METAL GLAZE 560K 5% 1/10W	
R1388	1-216-039-00	METAL GLAZE 390 5% 1/10W	
R1389	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R1390	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R1391	1-249-417-11	CARBON 1K 5% 1/4W	
R1401	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R1402	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W	
R1403	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R1404	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W	
R1405	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R1406	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R1407	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	

B **F2**

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION				REMARK
R1408	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R1409	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R1410	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R1411	1-216-029-00	METAL GLAZE	150	5%	1/10W	
R1412	1-216-031-00	METAL GLAZE	180	5%	1/10W	
R1413	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R1414	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R1415	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R1416	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R1417	1-216-031-00	METAL GLAZE	180	5%	1/10W	
R1418	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R1419	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R1420	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R1421	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R1422	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R1424	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R1425	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R1426	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R1427	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R1428	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R1429	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R1430	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R1431	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R1432	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R1433	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1434	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1435	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R1436	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R1437	1-216-091-00	METAL GLAZE	56K	5%	1/10W	
R1438	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R1439	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R1440	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R1441	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R1442	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R1443	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R1444	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R1445	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R1446	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R1447	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R1448	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R1449	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R1450	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R1451	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R1452	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R1453	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R1454	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1455	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1456	1-216-079-00	METAL GLAZE	18K	5%	1/10W	
R1457	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R1459	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R1460	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R1461	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R1462	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R1463	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R1464	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R1469	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R1475	1-216-295-00	CONDCTOR, CHIP				
R1476	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R1477	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R1478	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R1479	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R1480	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R1481	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R1482	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R1483	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R1484	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R1485	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R1486	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R1487	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R1501	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R1502	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R1503	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R1504	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R1505	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R1507	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R1508	1-216-079-00	METAL GLAZE	18K	5%	1/10W	
R1509	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R1510	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R1511	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R1523	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R1524	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R1525	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R1526	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R1527	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R1528	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R1529	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R1530	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R1531	1-216-009-00	METAL GLAZE	22	5%	1/10W	
R1532	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R1832	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R1833	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R1834	1-216-009-00	METAL GLAZE	22	5%	1/10W	

<VARIABLE RESISTOR>

RV1501	1-241-763-11	RES, ADJ, CERMET 4.7K

<CRYSTAL>

X1302	1-760-191-11	VIBRATOR, CRYSTAL
X1303	1-760-190-11	VIBRATOR, CRYSTAL
X1401	1-760-095-21	VIBRATOR, CRYSTAL
X1402	1-760-190-11	VIBRATOR, CRYSTAL
X1403	1-760-191-11	VIBRATOR, CRYSTAL

****

*A-1241-173-A F2 BOARD, COMPLETE
****

1-533-223-11 CLIP, FUSE

<CONNECTOR>

CN3601	*1-580-844-11	PIN, CONNECTOR (POWER)
CN3602	*1-695-292-11	PIN, CONNECTOR (POWER)

<FUSE>

F3601⚠	1-532-505-31	FUSE (5.0A/250V)

<SWITCH>

S3601⚠	1-571-433-12	SWITCH, PUSH (AC POWER)

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The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION			REMARK
	*A-1241-174-A	F1 BOARD, COMPLETE ******************			
	4-382-854-11	SCREW (M3X10), P, SW (+)			

<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION			REMARK
C1601⚠	1-104-706-51	FILM	0.22MF	20%	250V
C1602	1-136-601-11	FILM	0.01MF	10%	630V
C1603	1-136-601-11	FILM	0.01MF	10%	630V
C1609⚠	1-104-706-51	FILM	0.22MF	20%	250V
C1611	1-161-742-00	CERAMIC	0.0022MF	20%	400V
C1612⚠	1-161-830-91	CERAMIC	0.0047MF		500V
C1613⚠	1-161-830-91	CERAMIC	0.0047MF		500V
C1614	1-161-830-00	CERAMIC	0.0047MF		500V
C1615	1-161-830-00	CERAMIC	0.0047MF		500V
C1616	1-136-207-11	FILM	0.047MF	10%	400V
C1617	1-136-187-11	MYLAR	0.047MF	5%	250V
C1618	1-136-165-00	FILM	0.1MF	5%	50V
C1619	1-107-667-11	ELECT	2.2MF	20%	400V
C1620	1-124-122-11	ELECT	100MF	20%	50V
C1621	1-136-165-00	FILM	0.1MF	5%	50V
C1622	1-162-318-11	CERAMIC	0.001MF	10%	500V
C1624	1-104-350-11	ELECT	1000MF	20%	250V
C1625	1-104-350-11	ELECT	1000MF	20%	250V
C1626	1-124-903-11	ELECT	1MF	20%	50V

<CONNECTOR>

REF.NO.	PART NO.	DESCRIPTION
CN1601	*1-691-291-11	PIN, CONNECTOR (PC BOARD) 5P
CN1602	*1-508-765-00	PIN, CONNECTOR (5MM PITCH) 3P
CN1603	*1-508-765-00	PIN, CONNECTOR (5MM PITCH) 3P
CN1604	*1-508-786-00	PIN, CONNECTOR (5MM PITCH) 2P
CN1605	1-695-915-11	TAB (CONTACT)
CN1608	1-766-964-11	PIN, CONNECTOR (PC BOARD) 6P
CN1609	*1-564-507-11	PLUG, CONNECTOR 4P

<DIODE>

REF.NO.	PART NO.	DESCRIPTION
D1601⚠	8-719-510-53	DIODE D4SB60L
D1602	8-719-049-49	DIODE TF541S
D1603	8-719-110-18	DIODE RD10ESB3
D1604	8-719-304-63	DIODE RM11C
D1605	8-719-979-58	DIODE EGP10D
D1606	8-719-911-19	DIODE 1SS119
D1607	8-719-304-63	DIODE RM11C

<FERRITE BEAD>

REF.NO.	PART NO.	DESCRIPTION
FB1601	1-410-397-21	FERRITE BEAD INDUCTOR 1.1UH

<IC>

REF.NO.	PART NO.	DESCRIPTION
IC1601⚠	8-749-923-94	IC STR81159A

<COIL>

REF.NO.	PART NO.	DESCRIPTION	
L1601	1-412-525-21	INDUCTOR	10UH

<TRANSISTOR>

REF.NO.	PART NO.	DESCRIPTION
Q1601	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q1602	8-729-119-78	TRANSISTOR 2SC2785-HFE

<RESISTOR>

REF.NO.	PART NO.	DESCRIPTION				REMARK
R1603	1-247-289-00	CARBON	8.2M	5%	1W	
R1604	1-219-363-11	FUSIBLE	5.6	5%	5W	F
R1605	1-249-416-11	CARBON	820	5%	1/4W	F
R1606	1-249-416-11	CARBON	820	5%	1/4W	F
R1607	1-260-300-11	CARBON	4.7	5%	1/2W	
R1608	1-214-925-00	CARBON	330K	5%	1/2W	
R1609	1-214-925-00	CARBON	330K	5%	1/2W	
R1610	1-216-425-11	METAL OXIDE	56	5%	1W	F
R1611	1-249-429-11	CARBON	10K	5%	1/4W	
R1612	1-249-429-11	CARBON	10K	5%	1/4W	
R1613	1-249-417-11	CARBON	1K	5%	1/4W	F
R1614	1-215-928-11	METAL OXIDE	68K	5%	3W	F

<RELAY>

REF.NO.	PART NO.	DESCRIPTION
RY1601⚠	1-755-018-11	RELAY

<TRANSFORMER>

REF.NO.	PART NO.	DESCRIPTION
T1602⚠	1-421-944-11	TRANSFORMER, LINE FILTER

<THERMISTOR>

REF.NO.	PART NO.	DESCRIPTION
TH1601⚠	1-809-827-21	THERMISTOR, POSITIVE

****

REF.NO.	PART NO.	DESCRIPTION
	*A-1275-126-A	Q BOARD, COMPLETE *****************

<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION			REMARK
C01	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C02	1-124-927-11	ELECT	4.7MF	20%	50V
C03	1-124-927-11	ELECT	4.7MF	20%	50V
C04	1-164-489-11	CERAMIC CHIP	0.22MF	10%	16V
C05	1-162-568-11	CERAMIC CHIP	0.33MF	10%	16V
C06	1-126-964-11	ELECT	10MF	20%	50V
C07	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C08	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C09	1-104-664-11	ELECT	47MF	20%	25V
C10	1-124-927-11	ELECT	4.7MF	20%	50V
C11	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C12	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C13	1-164-346-11	CERAMIC CHIP	1MF		16V
C14	1-124-927-11	ELECT	4.7MF	20%	50V
C15	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C16	1-126-964-11	ELECT	10MF	20%	50V
C17	1-163-989-11	CERAMIC CHIP	0.033MF	10%	25V
C18	1-163-989-11	CERAMIC CHIP	0.033MF	10%	25V
C19	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C20	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C21	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C22	1-164-222-11	CERAMIC CHIP	0.22MF		25V
C23	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C24	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C25	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C26	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C27	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C28	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C29	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C30	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V

Q

REF.NO.	PART NO.	DESCRIPTION		REMARK
C31	1-163-239-11	CERAMIC CHIP 33PF	5%	50V
C32	1-124-927-11	ELECT 4.7MF	20%	50V
C33	1-126-964-11	ELECT 10MF	20%	50V
C34	1-163-038-91	CERAMIC CHIP 0.1MF		25V
C35	1-126-964-11	ELECT 10MF	20%	50V
C36	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C37	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C38	1-163-121-00	CERAMIC CHIP 150PF	5%	50V
C39	1-163-121-00	CERAMIC CHIP 150PF	5%	50V
C40	1-163-239-11	CERAMIC CHIP 33PF	5%	50V
C41	1-163-038-91	CERAMIC CHIP 0.1MF		25V
C42	1-126-964-11	ELECT 10MF	20%	50V
C43	1-163-038-91	CERAMIC CHIP 0.1MF		25V
C44	1-163-038-91	CERAMIC CHIP 0.1MF		25V
C45	1-163-125-00	CERAMIC CHIP 220PF	5%	50V
C46	1-163-125-00	CERAMIC CHIP 220PF	5%	50V
C47	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C48	1-163-129-00	CERAMIC CHIP 330PF	5%	50V
C49	1-163-038-91	CERAMIC CHIP 0.1MF		25V
C50	1-163-014-00	CERAMIC CHIP 0.0027MF	10%	50V
C51	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C52	1-163-038-91	CERAMIC CHIP 0.1MF		25V
C53	1-163-038-91	CERAMIC CHIP 0.1MF		25V
C54	1-126-964-11	ELECT 10MF	20%	50V
C55	1-163-038-91	CERAMIC CHIP 0.1MF		25V
C56	1-163-113-00	CERAMIC CHIP 68PF	5%	50V
C57	1-163-237-11	CERAMIC CHIP 27PF	5%	50V
C59	1-163-113-00	CERAMIC CHIP 68PF	5%	50V
C61	1-163-129-00	CERAMIC CHIP 330PF	5%	50V
C62	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C63	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
C64	1-124-927-11	ELECT 4.7MF	20%	50V
C65	1-163-038-91	CERAMIC CHIP 0.1MF		25V
C66	1-163-117-00	CERAMIC CHIP 100PF	5%	50V
C67	1-163-038-91	CERAMIC CHIP 0.1MF		25V
C68	1-126-964-11	ELECT 10MF	20%	50V
C69	1-163-038-91	CERAMIC CHIP 0.1MF		25V
C70	1-163-117-00	CERAMIC CHIP 100PF	5%	50V
C71	1-163-129-00	CERAMIC CHIP 330PF	5%	50V
C72	1-163-038-91	CERAMIC CHIP 0.1MF		25V
C73	1-163-014-00	CERAMIC CHIP 0.0027MF	10%	50V
C74	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C75	1-163-243-11	CERAMIC CHIP 47PF	5%	50V
C76	1-163-253-11	CERAMIC CHIP 120PF	5%	50V
C77	1-126-964-11	ELECT 10MF	20%	50V
C79	1-126-964-11	ELECT 10MF	20%	50V
C82	1-163-097-00	CERAMIC CHIP 15PF	5%	50V
C84	1-163-037-11	CERAMIC CHIP 0.022MF	10%	25V
C85	1-163-038-91	CERAMIC CHIP 0.1MF		25V
C86	1-163-038-91	CERAMIC CHIP 0.1MF		25V
C87	1-163-038-91	CERAMIC CHIP 0.1MF		25V
C88	1-163-038-91	CERAMIC CHIP 0.1MF		25V
C89	1-163-038-91	CERAMIC CHIP 0.1MF		25V
C90	1-163-251-11	CERAMIC CHIP 100PF	5%	50V
C91	1-126-964-11	ELECT 10MF	20%	50V
C92	1-163-038-91	CERAMIC CHIP 0.1MF		25V
C93	1-163-038-91	CERAMIC CHIP 0.1MF		25V
C94	1-126-233-11	ELECT 22MF	20%	50V
C95	1-163-038-91	CERAMIC CHIP 0.1MF		25V
C96	1-126-233-11	ELECT 22MF	20%	50V
C97	1-163-038-91	CERAMIC CHIP 0.1MF		25V
C98	1-126-233-11	ELECT 22MF	20%	50V
C99	1-163-038-91	CERAMIC CHIP 0.1MF		25V
C1001	1-163-038-91	CERAMIC CHIP 0.1MF		25V

REF.NO.	PART NO.	DESCRIPTION		REMARK
C1004	1-164-346-11	CERAMIC CHIP 1MF		16V
C1005	1-163-038-91	CERAMIC CHIP 0.1MF		25V
C1006	1-163-038-91	CERAMIC CHIP 0.1MF		25V
C1007	1-163-038-91	CERAMIC CHIP 0.1MF		25V
C1008	1-163-038-91	CERAMIC CHIP 0.1MF		25V
C1009	1-163-038-91	CERAMIC CHIP 0.1MF		25V
C1012	1-163-251-11	CERAMIC CHIP 100PF	5%	50V
C1014	1-164-346-11	CERAMIC CHIP 1MF		16V
C1016	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C1017	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C1018	1-163-038-91	CERAMIC CHIP 0.1MF		25V
C1019	1-163-038-91	CERAMIC CHIP 0.1MF		25V
C1020	1-163-251-11	CERAMIC CHIP 100PF	5%	50V
C1022	1-163-038-91	CERAMIC CHIP 0.1MF		25V
C1023	1-163-038-91	CERAMIC CHIP 0.1MF		25V
C1024	1-163-038-91	CERAMIC CHIP 0.1MF		25V
C1025	1-163-038-91	CERAMIC CHIP 0.1MF		25V
C1026	1-163-038-91	CERAMIC CHIP 0.1MF		25V
C1027	1-164-346-11	CERAMIC CHIP 1MF		16V
C1028	1-164-346-11	CERAMIC CHIP 1MF		16V

<CONNECTOR>

CN40	1-695-301-11	CONNECTOR, BOARD TO BOARD 40P

<DIODE>

D03	8-719-047-36	DIODE BBY40
D04	8-719-047-37	DIODE BAS16
D05	8-719-047-37	DIODE BAS16
D06	8-719-047-37	DIODE BAS16
D08	8-719-047-36	DIODE BBY40
D09	8-719-047-37	DIODE BAS16
D10	8-719-047-36	DIODE BBY40
D11	8-719-047-37	DIODE BAS16
D12	8-719-047-37	DIODE BAS16
D13	8-719-105-91	DIODE RD5.6M-B2
D15	8-719-914-43	DIODE DAN202K
D16	8-719-914-43	DIODE DAN202K

<FERRITE BEAD>

FB01	1-414-232-11	INDUCTOR, FERRITE BEAD
FB02	1-414-232-11	INDUCTOR, FERRITE BEAD

<FILTER>

FL01	1-239-882-11	FILTER, LOW PASS
FL02	1-236-071-41	ENCAPSULATED COMPONENT
FL03	1-236-071-41	ENCAPSULATED COMPONENT
FL04	1-236-071-41	ENCAPSULATED COMPONENT
FL05	1-236-071-41	ENCAPSULATED COMPONENT
FL06	1-236-071-41	ENCAPSULATED COMPONENT
FL08	1-236-071-41	ENCAPSULATED COMPONENT
FL09	1-239-881-11	FILTER, LOW PASS
FL10	1-239-881-11	FILTER, LOW PASS
FL11	1-239-883-11	FILTER, LOW PASS

<IC>

IC01	8-759-257-59	IC TDA8755T-T
IC02	8-759-280-76	IC ZA2970-26DTR
IC03	8-759-280-76	IC ZA2970-26DTR
IC04	8-759-257-61	IC SAA4940H-T

REF.NO.	PART NO.	DESCRIPTION	REMARK
IC06	8-759-257-92	IC SAA4951WP/V1-T	
IC07	8-759-297-15	IC P83C652FBA-V3/AB517	
IC08	8-759-708-05	IC NJM78L05A	
IC10	8-759-033-03	IC MC74F08M	
IC11	8-759-708-05	IC NJM78L05A	
IC12	8-759-267-22	IC MC14046BDWR2	
IC13	8-759-238-87	IC TC4S66F(TE85R)	
IC14	8-759-708-05	IC NJM78L05A	
IC15	8-759-238-87	IC TC4S66F(TE85R)	
IC16	8-759-033-03	IC MC74F08M	
IC17	8-759-257-63	IC SAA7158WP-T	
IC18	8-759-708-05	IC NJM78L05A	
IC19	8-759-238-87	IC TC4S66F(TE85R)	
IC20	8-759-238-87	IC TC4S66F(TE85R)	
IC23	8-752-012-52	IC CX20125	
IC24	8-759-710-86	IC NJM2233BM	
IC25	8-759-042-02	IC S-80743AL-A7-S	
		<CONDCTOR CHIP>	
JR15	1-216-295-00	CONDCTOR, CHIP	
JR17	1-216-295-00	CONDCTOR, CHIP	
JR19	1-216-295-00	CONDCTOR, CHIP	
JR20	1-216-295-00	CONDCTOR, CHIP	
JR22	1-216-295-00	CONDCTOR, CHIP	
JR23	1-216-295-00	CONDCTOR, CHIP	
JR24	1-216-295-00	CONDCTOR, CHIP	
JR25	1-216-295-00	CONDCTOR, CHIP	
JR26	1-216-295-00	CONDCTOR, CHIP	
JR30	1-216-295-00	CONDCTOR, CHIP	
JR31	1-216-295-00	CONDCTOR, CHIP	
JR33	1-216-295-00	CONDCTOR, CHIP	
JR35	1-216-295-00	CONDCTOR, CHIP	
JR36	1-216-295-00	CONDCTOR, CHIP	
JR37	1-216-295-00	CONDCTOR, CHIP	
JR39	1-216-295-00	CONDCTOR, CHIP	
JR40	1-216-295-00	CONDCTOR, CHIP	
JR43	1-216-295-00	CONDCTOR, CHIP	
JR44	1-216-295-00	CONDCTOR, CHIP	
JR45	1-216-295-00	CONDCTOR, CHIP	
JR46	1-216-295-00	CONDCTOR, CHIP	
JR47	1-216-295-00	CONDCTOR, CHIP	
JR48	1-216-295-00	CONDCTOR, CHIP	
JR49	1-216-295-00	CONDCTOR, CHIP	
JR50	1-216-295-00	CONDCTOR, CHIP	
JR51	1-216-295-00	CONDCTOR, CHIP	
JR52	1-216-295-00	CONDCTOR, CHIP	
JR53	1-216-295-00	CONDCTOR, CHIP	
JR54	1-216-295-00	CONDCTOR, CHIP	
JR55	1-216-295-00	CONDCTOR, CHIP	
JR56	1-216-295-00	CONDCTOR, CHIP	
JR57	1-216-295-00	CONDCTOR, CHIP	
JR58	1-216-295-00	CONDCTOR, CHIP	
		<COIL>	
L01	1-410-435-21	INDUCTOR 220UH	
L02	1-410-435-21	INDUCTOR 220UH	
L04	1-408-409-00	INDUCTOR 10UH	
L05	1-426-942-11	TRANSFORMER, DETECTOR	
L06	1-426-941-11	TRANSFORMER, DETECTOR	
L07	1-426-803-21	TRANSFORMER, DETECTOR	
L08	1-408-409-00	INDUCTOR 10UH	
L09	1-408-409-00	INDUCTOR 10UH	
L10	1-426-801-21	TRANSFORMER, DETECTOR	
L14	1-408-409-00	INDUCTOR 10UH	
L15	1-408-409-00	INDUCTOR 10UH	
L16	1-408-409-00	INDUCTOR 10UH	
L1001	1-410-989-11	INDUCTOR CHIP 0.47UH	
		<TRANSISTOR>	
Q01	8-729-216-22	TRANSISTOR 2SA1162-G	
Q03	8-729-216-22	TRANSISTOR 2SA1162-G	
Q04	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q05	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q06	8-729-216-22	TRANSISTOR 2SA1162-G	
Q07	8-729-901-01	TRANSISTOR DTC144EK	
Q08	8-729-025-25	TRANSISTOR BF550	
Q09	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q10	8-729-025-25	TRANSISTOR BF550	
Q11	8-729-025-25	TRANSISTOR BF550	
Q12	8-729-216-22	TRANSISTOR 2SA1162-G	
Q13	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q14	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q15	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q16	8-729-216-22	TRANSISTOR 2SA1162-G	
Q17	8-729-901-01	TRANSISTOR DTC144EK	
Q18	8-729-901-01	TRANSISTOR DTC144EK	
Q19	8-729-216-22	TRANSISTOR 2SA1162-G	
Q20	8-729-216-22	TRANSISTOR 2SA1162-G	
Q21	8-729-216-22	TRANSISTOR 2SA1162-G	
Q22	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q23	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q24	8-729-901-01	TRANSISTOR DTC144EK	
Q27	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q28	8-729-216-22	TRANSISTOR 2SA1162-G	
Q29	8-729-901-01	TRANSISTOR DTC144EK	
Q30	8-729-920-74	TRANSISTOR 2SC2412K-QR	
		<RESISTOR>	
R02	1-216-295-00	CONDCTOR, CHIP	
R04	1-216-113-00	METAL GLAZE 470K 5% 1/10W	
R05	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R07	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R08	1-216-047-00	METAL GLAZE 820 5% 1/10W	
R09	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R10	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R11	1-216-045-00	METAL GLAZE 680 5% 1/10W	
R12	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R13	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R14	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R15	1-216-047-00	METAL GLAZE 820 5% 1/10W	
R16	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W	
R20	1-216-035-00	METAL GLAZE 270 5% 1/10W	
R21	1-216-045-00	METAL GLAZE 680 5% 1/10W	
R22	1-216-017-00	METAL GLAZE 47 5% 1/10W	
R23	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W	
R24	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R25	1-216-047-00	METAL GLAZE 820 5% 1/10W	
R26	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R27	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R28	1-216-001-00	METAL GLAZE 10 5% 1/10W	
R29	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R30	1-216-295-00	CONDCTOR, CHIP	
R33	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	

Q

REF.NO.	PART NO.	DESCRIPTION				REMARK
R34	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R35	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R36	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R37	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R38	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R39	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R40	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R41	1-216-295-00	CONDCTOR, CHIP				
R42	1-216-295-00	CONDCTOR, CHIP				
R43	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R44	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R45	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R46	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R47	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R48	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R49	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R54	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R55	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R56	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R57	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R58	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R59	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R60	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R61	1-216-099-00	METAL GLAZE	120K	5%	1/10W	
R62	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R65	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R66	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R67	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R68	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R69	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R70	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R71	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R72	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R73	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R74	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R75	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R76	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R77	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R78	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R79	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R80	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R81	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R83	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R84	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R85	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R87	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R89	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R90	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R91	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R92	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R93	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R94	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R95	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R96	1-216-295-00	CONDCTOR, CHIP				
R99	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1001	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1002	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1003	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R1004	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R1005	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R1006	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R1007	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R1008	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1009	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R1010	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R1012	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R1013	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R1014	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R1015	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R1016	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R1017	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1018	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R1019	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R1020	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R1021	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1022	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R1024	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R1026	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R1027	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R1028	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R1029	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R1030	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1031	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R1032	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R1033	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R1038	1-216-295-00	CONDCTOR, CHIP				
R1039	1-216-295-00	CONDCTOR, CHIP				
R1040	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R1041	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R1042	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1043	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1044	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1045	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1046	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1047	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1048	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1049	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1050	1-216-295-00	CONDCTOR, CHIP				
R1052	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R1053	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R1054	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R1055	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R1056	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R1057	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R1060	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R1061	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R1062	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R1063	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R1064	1-216-295-00	CONDCTOR, CHIP				
R1065	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R1066	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R1067	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R1068	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1069	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1070	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1071	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1072	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1073	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1074	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1075	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1076	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1077	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1078	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1079	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1080	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1081	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1082	1-216-025-00	METAL GLAZE	100	5%	1/10W	

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION				REMARK
R1083	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1084	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R1085	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R1086	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R1087	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R1088	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R1089	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R1091	1-216-025-00	METAL GLAZE	100	5%	1/10W	

<CRYSTAL>

REF.NO.	PART NO.	DESCRIPTION
X1	1-578-774-11	VIBRATOR, CRYSTAL

* * *

*A-1297-417-A A2 BOARD, COMPLETE (KV-W28MN11/MH11)

*A-1297-419-A A2 BOARD, COMPLETE (KV-W32MN11/MH11)

<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION				REMARK
C101	1-124-126-00	ELECT	47MF	20%	16V	
C102	1-163-005-11	CERAMIC CHIP	470PF	10%	50V	
C103	1-163-031-11	CERAMIC CHIP	0.01MF		50V	
C104	1-126-967-11	ELECT	47MF	20%	50V	
C105	1-126-967-11	ELECT	47MF	20%	50V	
C106	1-163-005-11	CERAMIC CHIP	470PF	10%	50V	
C107	1-163-005-11	CERAMIC CHIP	470PF	10%	50V	(KV-W32MN11/MH11)
C108	1-126-233-11	ELECT	22MF	20%	50V	(KV-W32MN11/MH11)
C109	1-126-233-11	ELECT	22MF	20%	50V	
C110	1-124-126-00	ELECT	47MF	20%	16V	(KV-W32MN11/MH11)
C111	1-163-005-11	CERAMIC CHIP	470PF	10%	50V	(KV-W32MN11/MH11)
C112	1-124-903-11	ELECT	1MF	20%	50V	
C113	1-124-126-00	ELECT	47MF	20%	16V	(KV-W32MN11/MH11)
C114	1-163-005-11	CERAMIC CHIP	470PF	10%	50V	(KV-W32MN11/MH11)
C115	1-163-005-11	CERAMIC CHIP	470PF	10%	50V	
C116	1-124-126-00	ELECT	47MF	20%	16V	(KV-W32MN11/MH11)
C117	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	
C118	1-124-126-00	ELECT	47MF	20%	16V	
C119	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V	
C120	1-163-001-11	CERAMIC CHIP	220PF	10%	50V	
C121	1-124-126-00	ELECT	47MF	20%	16V	(KV-W32MN11/MH11)
C122	1-163-005-11	CERAMIC CHIP	470PF	10%	50V	(KV-W32MN11/MH11)
C123	1-124-126-00	ELECT	47MF	20%	16V	
C124	1-163-005-11	CERAMIC CHIP	470PF	10%	50V	

<CONNECTOR>

REF.NO.	PART NO.	DESCRIPTION
CN101	1-695-301-11	CONNECTOR, BOARD TO BOARD 40P
CN102	1-695-915-11	TAB (CONTACT)

<DIODE>

REF.NO.	PART NO.	DESCRIPTION
D101	8-719-119-22	DIODE RD33F-T7B1

<IF BLOCK>

REF.NO.	PART NO.	DESCRIPTION	REMARK
IF101	1-466-677-11	IF BLOCK (IFF-380)	
IF102	1-466-138-11	IF BLOCK (IFF-380A)	(KV-W32MN11/MH11)

<COIL>

REF.NO.	PART NO.	DESCRIPTION		REMARK
L101	1-408-417-00	INDUCTOR	47UH	
L102	1-408-417-00	INDUCTOR	47UH	
L103	1-408-417-00	INDUCTOR	47UH	(KV-W32MN11/MH11)
L104	1-408-417-00	INDUCTOR	47UH	(KV-W32MN11/MH11)
L105	1-408-417-00	INDUCTOR	47UH	(KV-W32MN11/MH11)
L106	1-408-417-00	INDUCTOR	47UH	

<TRANSISTOR>

REF.NO.	PART NO.	DESCRIPTION
Q101	8-729-216-22	TRANSISTOR 2SA1162-G

<RESISTOR>

REF.NO.	PART NO.	DESCRIPTION				REMARK
R102	1-216-464-11	METAL OXIDE	18K	5%	2W	F
R103	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R104	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R105	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R106	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R107	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R108	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R109	1-216-033-00	METAL GLAZE	220	5%	1/10W	(KV-W32MN11/MH11)
R110	1-216-033-00	METAL GLAZE	220	5%	1/10W	(KV-W32MN11/MH11)
R111	1-216-073-00	METAL GLAZE	10K	5%	1/10W	(KV-W32MN11/MH11)
R112	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R113	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R114	1-216-099-00	METAL GLAZE	120K	5%	1/10W	
R115	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R116	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R117	1-216-081-00	METAL GLAZE	22K	5%	1/10W	(KV-W32MN11/MH11)

<TUNER>

REF.NO.	PART NO.	DESCRIPTION	REMARK
TU101⚠	8-598-270-00	TUNER, ET BTP-RG421	[illegible]
TU102⚠	8-598-270-00	TUNER, ET BTP-RG421	(KV-W32MN11/MH11)

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*A-1297-418-A A BOARD, COMPLETE

4-382-854-11 SCREW (M3X10), P, SW (+)

<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION			
C001	1-126-204-11	ELECT	47MF	20%	16V
C002	1-126-233-11	ELECT	22MF	20%	50V
C003	1-104-664-11	ELECT	47MF	20%	25V
C004	1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V
C005	1-124-126-00	ELECT	47MF	20%	16V
C006	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C007	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C008	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C009	1-163-033-91	CERAMIC CHIP	0.022MF		50V
C010	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

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REF.NO.	PART NO.	DESCRIPTION			REMARK
C011	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C012	1-164-346-11	CERAMIC CHIP	1MF		16V
C029	1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V
C037	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C040	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C041	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C042	1-164-346-11	CERAMIC CHIP	1MF		16V
C057	1-124-902-00	ELECT	0.47MF	20%	50V
C104	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C105	1-124-126-00	ELECT	47MF	20%	16V
C268	1-126-934-11	ELECT	220MF	20%	16V
C269	1-124-126-00	ELECT	47MF	20%	16V
C270	1-126-933-11	ELECT	100MF	20%	16V
C271	1-164-005-11	CERAMIC CHIP	0.47MF		25V
C301	1-164-346-11	CERAMIC CHIP	1MF		16V
C302	1-164-346-11	CERAMIC CHIP	1MF		16V
C303	1-164-346-11	CERAMIC CHIP	1MF		16V
C304	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C305	1-126-934-11	ELECT	220MF	20%	16V
C306	1-163-037-11	CERAMIC CHIP	0.022MF	10%	25V
C307	1-163-037-11	CERAMIC CHIP	0.022MF	10%	25V
C308	1-164-005-11	CERAMIC CHIP	0.47MF		25V
C310	1-164-346-11	CERAMIC CHIP	1MF		16V
C311	1-164-346-11	CERAMIC CHIP	1MF		16V
C312	1-164-346-11	CERAMIC CHIP	1MF		16V
C313	1-124-927-11	ELECT	4.7MF	20%	50V
C314	1-124-903-11	ELECT	1MF	20%	50V
C315	1-164-336-11	CERAMIC CHIP	0.33MF		25V
C316	1-164-346-11	CERAMIC CHIP	1MF		16V
C317	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C318	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C319	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C320	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C321	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C322	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C325	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C327	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C328	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C329	1-164-346-11	CERAMIC CHIP	1MF		16V
C331	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C336	1-164-346-11	CERAMIC CHIP	1MF		16V
C337	1-164-346-11	CERAMIC CHIP	1MF		16V
C338	1-164-346-11	CERAMIC CHIP	1MF		16V
C339	1-164-346-11	CERAMIC CHIP	1MF		16V
C601	1-137-479-11	FILM	1MF	10%	400V
C602	1-124-927-11	ELECT	4.7MF	20%	50V
C603	1-124-463-00	ELECT	0.1MF	20%	50V
C604	1-126-233-11	ELECT	22MF	20%	50V
C605	1-136-481-11	FILM	0.0022MF	2%	50V
C607	1-127-530-11	ELECT(SOLID)	22MF	20%	20V
C608	1-126-233-11	ELECT	22MF	20%	50V
C609	1-136-165-00	FILM	0.1MF	5%	50V
C610	1-164-625-11	CERAMIC	680PF	10%	500V
C611	1-164-625-11	CERAMIC	680PF	10%	500V
C612	1-126-964-11	ELECT	10MF	20%	50V
C613	1-107-910-11	ELECT	100MF	20%	50V
C614	1-165-127-11	CERAMIC	470PF	10%	500V
C615	1-137-219-11	FILM	0.015MF	5%	0
C616	1-137-219-11	FILM	0.015MF	5%	0
[illegible]	1-16[illegible]46-51	CERAMIC	0.0022MF	20%	400V
C619	1-104-760-11	CERAMIC CHIP	0.047MF	10%	50V
C620	1-104-760-11	CERAMIC CHIP	0.047MF	10%	50V
C624	1-126-964-11	ELECT	10MF	20%	50V
C652	1-126-953-11	ELECT	2200MF	20%	35V
C653	1-126-953-11	ELECT	2200MF	20%	35V
C654	1-162-318-11	CERAMIC	0.001MF	10%	500V
C655	1-128-548-11	ELECT	4700MF	20%	25V
C656	1-126-929-11	ELECT	4700MF	20%	10V
C658	1-124-347-00	ELECT	100MF	20%	160V
C659	1-126-967-11	ELECT	47MF	20%	50V
C660	1-126-233-11	ELECT	22MF	20%	50V
C661	1-102-030-00	CERAMIC	330PF	10%	500V
C662	1-106-347-00	MYLAR	0.0015MF	10%	100V
C663	1-104-666-11	ELECT	220MF	20%	25V
C664	1-124-916-11	ELECT	22MF	20%	25V
C665	1-124-903-11	ELECT	1MF	20%	50V
C667	1-164-645-11	CERAMIC	1000PF	10%	500V
C668	1-164-645-11	CERAMIC	1000PF	10%	500V
C669	1-164-645-11	CERAMIC	1000PF	10%	500V
C670	1-164-645-11	CERAMIC	1000PF	10%	500V
C1200	1-163-037-11	CERAMIC CHIP	0.022MF	10%	25V
C1201	1-163-229-11	CERAMIC CHIP	12PF	5%	50V
C1202	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C1203	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C1204	1-124-126-00	ELECT	47MF	20%	16V
C1205	1-164-222-11	CERAMIC CHIP	0.22MF		25V
C1206	1-164-005-11	CERAMIC CHIP	0.47MF		25V
C1207	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C1208	1-126-964-11	ELECT	10MF	20%	50V
C1209	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C1210	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C1211	1-126-111-11	ELECT	3.3MF	20%	50V
C1212	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C1213	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C1214	1-126-233-11	ELECT	22MF	20%	50V
C1215	1-126-964-11	ELECT	10MF	20%	50V
C1219	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
C1220	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
C1221	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C1222	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C1225	1-126-233-11	ELECT	22MF	20%	50V
C1226	1-124-126-00	ELECT	47MF	20%	16V
C1227	1-126-933-11	ELECT	100MF	20%	16V
C1228	1-164-222-11	CERAMIC CHIP	0.22MF		25V
C1229	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C1230	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C1231	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C1232	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C1233	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C1234	1-164-005-11	CERAMIC CHIP	0.47MF		25V
C1235	1-164-005-11	CERAMIC CHIP	0.47MF		25V
C1238	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C1239	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C1240	1-164-005-11	CERAMIC CHIP	0.47MF		25V
C1241	1-164-005-11	CERAMIC CHIP	0.47MF		25V
C1243	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C1247	1-126-233-11	ELECT	22MF	20%	50V
C1252	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C1254	1-163-033-91	CERAMIC CHIP	0.022MF		50V
C1255	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C2001	1-124-126-00	ELECT	47MF	20%	16V
C2003	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C2004	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C2005	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C2009	1-164-346-11	CERAMIC CHIP	1MF		16V
C2010	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C2011	1-163-038-91	CERAMIC CHIP	0.1MF		25V

REF.NO.	PART NO.	DESCRIPTION			REMARK
C2012	1-163-989-11	CERAMIC CHIP	0.033MF	10%	25V
C2014	1-126-964-11	ELECT	10MF	20%	50V
C2015	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C2016	1-126-964-11	ELECT	10MF	20%	50V
C2017	1-163-229-11	CERAMIC CHIP	12PF	5%	50V
C2018	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C2601	1-104-664-11	ELECT	47MF	20%	25V
C2602	1-104-664-11	ELECT	47MF	20%	25V
C2603	1-104-664-11	ELECT	47MF	20%	25V
C2604	1-104-664-11	ELECT	47MF	20%	25V
C2605	1-104-664-11	ELECT	47MF	20%	25V

<CONNECTOR>

CN101	*1-564-512-11	PLUG, CONNECTOR 9P
CN102	*1-764-177-11	PIN, CONNECTOR (SMD)(1.5MM) 7P
CN107	*1-564-509-11	PLUG, CONNECTOR 6P
CN118	1-764-608-11	CONNECTOR, BOARD TO BOARD 8P
CN119	1-764-608-11	CONNECTOR, BOARD TO BOARD 8P
CN120	1-764-608-11	CONNECTOR, BOARD TO BOARD 8P
CN121	1-764-608-11	CONNECTOR, BOARD TO BOARD 8P
CN123	*1-564-511-11	PLUG, CONNECTOR 8P
CN128	*1-564-506-11	PLUG, CONNECTOR 3P
CN131	1-764-608-11	CONNECTOR, BOARD TO BOARD 8P
CN132	1-695-298-11	CONNECTOR, BOARD TO BOARD 40P
CN133	1-695-298-11	CONNECTOR, BOARD TO BOARD 40P
CN134	1-695-298-11	CONNECTOR, BOARD TO BOARD 40P
CN135	*1-564-508-11	PLUG, CONNECTOR 5P
CN136	*1-564-509-11	PLUG, CONNECTOR 6P
CN137	1-695-298-11	CONNECTOR, BOARD TO BOARD 40P
CN601	1-766-964-11	PIN, CONNECTOR (PC BOARD) 6P

<DIODE>

D011	8-719-914-43	DIODE DAN202K
D201	8-719-404-46	DIODE MA110
D202	8-719-914-42	DIODE DA204K
D203	8-719-404-46	DIODE MA110
D204	8-719-404-46	DIODE MA110
D301	8-719-914-43	DIODE DAN202K
D302	8-719-914-43	DIODE DAN202K
D303	8-719-914-43	DIODE DAN202K
D304	8-719-914-43	DIODE DAN202K
D306	8-719-914-43	DIODE DAN202K
D307	8-719-404-46	DIODE MA110
D308	8-719-404-46	DIODE MA110
D309	8-719-404-46	DIODE MA110
D310	8-719-404-46	DIODE MA110
D311	8-719-404-46	DIODE MA110
D312	8-719-404-46	DIODE MA110
D601	8-719-979-58	DIODE EGP10D
D602	8-719-402-72	DIODE MA3180M-TX
D603	8-719-979-58	DIODE EGP10D
D604	8-719-402-72	DIODE MA3180M-TX
D605	8-719-402-72	DIODE MA3180M-TX
D606	8-719-402-72	DIODE MA3180M-TX
D607	8-719-404-46	DIODE MA110
D608	8-719-404-46	DIODE MA110
D609	8-719-118-15	DIODE RD36M-B
D610	8-719-510-48	DIODE D1N20R
D611	8-719-510-48	DIODE D1N20R
D612	8-719-404-46	DIODE MA110
D613	8-719-979-58	DIODE EGP10D
D614	8-719-106-89	DIODE RD15M-B2

REF.NO.	PART NO.	DESCRIPTION	REMARK
D615	8-719-404-46	DIODE MA110	
D616	8-719-404-46	DIODE MA110	
D651	8-719-047-31	DIODE RBA-402L	
D652	8-719-312-47	DIODE RBA-404B	
D654	8-719-047-31	DIODE RBA-402L	
D655	8-719-510-48	DIODE D1N20R	
D656	8-719-404-46	DIODE MA110	
D657	8-719-404-46	DIODE MA110	

<FERRITE BEAD>

FB001	1-414-235-11	INDUCTOR, FERRITE BEAD
FB002	1-414-235-11	INDUCTOR, FERRITE BEAD
FB003	1-414-235-11	INDUCTOR, FERRITE BEAD
FB004	1-414-235-11	INDUCTOR, FERRITE BEAD
FB005	1-414-235-11	INDUCTOR, FERRITE BEAD
FB006	1-414-235-11	INDUCTOR, FERRITE BEAD
FB007	1-414-235-11	INDUCTOR, FERRITE BEAD
FB008	1-414-235-11	INDUCTOR, FERRITE BEAD
FB602	1-410-397-21	FERRITE BEAD INDUCTOR 1.1UH
FB603	1-410-397-21	FERRITE BEAD INDUCTOR 1.1UH
FB604	1-410-397-21	FERRITE BEAD INDUCTOR 1.1UH
FB605	1-410-397-21	FERRITE BEAD INDUCTOR 1.1UH
FB608	1-410-397-21	FERRITE BEAD INDUCTOR 1.1UH
FB651	1-410-397-21	FERRITE BEAD INDUCTOR 1.1UH
FB652	1-410-397-21	FERRITE BEAD INDUCTOR 1.1UH
FB653	1-410-397-21	FERRITE BEAD INDUCTOR 1.1UH
FB655	1-410-397-21	FERRITE BEAD INDUCTOR 1.1UH
FB1200	1-414-235-11	INDUCTOR, FERRITE BEAD
FB1201	1-414-234-11	INDUCTOR, FERRITE BEAD

<FILTER>

FL1201	1-239-803-41	ENCAPSULATED COMPONENT

<IC>

IC001	8-759-708-05	IC NJM78L05A
IC002	8-759-165-37	IC X24164SIC7000
IC003	8-752-857-45	IC CXP85340A-SV4918
IC004	8-759-042-02	IC S-80743AL-A7-S
IC301	8-759-300-71	IC HD14053BFP
IC302	8-759-257-62	IC TDA4686
IC303	8-759-909-71	IC BA4558F
IC601	8-759-297-44	IC MC33025P
IC602	8-759-185-47	IC IR2112
IC650	1-810-477-11	POWER MODULE (DM-48)
IC651	8-749-010-65	PHOTO COUPLER PC123FY2
IC652	8-759-420-19	IC AN1431T
IC1201	8-759-285-19	IC MSP3410TE-L
IC1202	8-759-708-08	IC NJM78L08A
IC2001	8-759-285-20	IC TPU3040TE-L
	1-251-256-11	SOCKET, IC; IC2001
IC2002	8-759-288-09	IC MB81C1000A-80PSZ
IC2601	8-759-518-68	IC PQ12RF21
IC2602	8-759-701-59	IC NJM78M09FA
IC2603	8-749-010-55	IC PQ05RH1

<CONDCTOR CHIP>

JR1202	1-216-295-00	CONDCTOR, CHIP
JR1203	1-216-295-00	CONDCTOR, CHIP

A

<COIL>

REF.NO.	PART NO.	DESCRIPTION	REMARK
L002	1-408-609-41	INDUCTOR 33UH	
L003	1-408-404-00	INDUCTOR 3.9UH	
L101	1-408-417-00	INDUCTOR 47UH	
L651	1-412-525-21	INDUCTOR 10UH	
L652	1-412-525-21	INDUCTOR 10UH	
L653	1-412-525-21	INDUCTOR 10UH	
L654	1-412-525-21	INDUCTOR 10UH	
L655	1-412-525-21	INDUCTOR 10UH	
L1202	1-408-417-00	INDUCTOR 47UH	
L1203	1-408-408-00	INDUCTOR 8.2UH	
L1204	1-408-397-00	INDUCTOR 1UH	
L1205	1-408-408-00	INDUCTOR 8.2UH	
L2001	1-408-609-41	INDUCTOR 33UH	

<IC LINK>

REF.NO.	PART NO.	DESCRIPTION	REMARK
PS651	1-532-686-21	LINK, IC	

<TRANSISTOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
Q101	8-729-901-01	TRANSISTOR DTC144EK	
Q203	8-729-216-22	TRANSISTOR 2SA1162-G	
Q204	8-729-216-22	TRANSISTOR 2SA1162-G	
Q301	8-729-216-22	TRANSISTOR 2SA1162-G	
Q302	8-729-216-22	TRANSISTOR 2SA1162-G	
Q303	8-729-216-22	TRANSISTOR 2SA1162-G	
Q304	8-729-900-53	TRANSISTOR DTC114EK	
Q305	8-729-216-22	TRANSISTOR 2SA1162-G	
Q306	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q307	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q308	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q309	8-729-216-22	TRANSISTOR 2SA1162-G	
Q310	8-729-900-53	TRANSISTOR DTC114EK	
Q311	8-729-900-53	TRANSISTOR DTC114EK	
Q312	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q313	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q314	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q315	8-729-900-53	TRANSISTOR DTC114EK	
Q316	8-729-900-53	TRANSISTOR DTC114EK	
Q317	8-729-900-53	TRANSISTOR DTC114EK	
Q318	8-729-900-53	TRANSISTOR DTC114EK	
Q319	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q320	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q321	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q322	8-729-216-22	TRANSISTOR 2SA1162-G	
Q601	8-729-216-22	TRANSISTOR 2SA1162-G	
Q602	8-729-216-22	TRANSISTOR 2SA1162-G	
Q603	8-729-216-22	TRANSISTOR 2SA1162-G	
Q604	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q605	8-729-028-10	TRANSISTOR IRFI744G-LF	
Q606	8-729-028-10	TRANSISTOR IRFI744G-LF	
Q607	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q608	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q611	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q612	8-729-209-15	TRANSISTOR 2SD2012	
Q651	8-729-216-22	TRANSISTOR 2SA1162-G	
Q652	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q653	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q1201	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q1202	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q1203	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q1204	8-729-216-22	TRANSISTOR 2SA1162-G	
Q1205	8-729-216-22	TRANSISTOR 2SA1162-G	
Q1206	8-729-216-22	TRANSISTOR 2SA1162-G	
Q1207	8-729-216-22	TRANSISTOR 2SA1162-G	
Q1208	8-729-216-22	TRANSISTOR 2SA1162-G	
Q1209	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q1210	8-729-901-01	TRANSISTOR DTC144EK	
Q2006	8-729-216-22	TRANSISTOR 2SA1162-G	

<RESISTOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
R001	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R002	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R003	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R004	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R005	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R006	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R007	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R008	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R009	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R010	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R011	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R012	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R013	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R014	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R015	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R016	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R017	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R018	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R019	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R020	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R021	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R022	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R023	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R024	1-216-045-00	METAL GLAZE 680 5% 1/10W	
R025	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R026	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R027	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R028	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R029	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R030	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R031	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R032	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R033	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R034	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R035	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R036	1-216-295-00	CONDCTOR, CHIP	
R037	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R038	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R039	1-216-039-00	METAL GLAZE 390 5% 1/10W	
R040	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R041	1-216-039-00	METAL GLAZE 390 5% 1/10W	
R042	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R043	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R044	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R045	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R046	1-216-039-00	METAL GLAZE 390 5% 1/10W	
R047	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R048	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R049	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R050	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
R051	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R052	1-216-699-11	METAL CHIP 100K 0.50% 1/10W	
R053	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R055	1-216-049-00	METAL GLAZE 1K 5% 1/10W	

REF.NO.	PART NO.	DESCRIPTION				REMARK
R056	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R057	1-216-095-00	METAL GLAZE	82K	5%	1/10W	
R058	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R059	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R060	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R061	1-218-756-11	METAL CHIP	150K	0.50%	1/10W	
R062	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R063	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R064	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R066	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R071	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R072	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R102	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R251	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R252	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R253	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R254	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R301	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R302	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R303	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R304	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R305	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R306	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R307	1-216-031-00	METAL GLAZE	180	5%	1/10W	
R308	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R309	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R310	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R311	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R312	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R313	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R315	1-216-295-00	CONDCTOR, CHIP				
R316	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R317	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R318	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R320	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R321	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R322	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R323	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R324	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R325	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R326	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R327	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R328	1-216-079-00	METAL GLAZE	18K	5%	1/10W	
R329	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R330	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R331	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R332	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R333	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R334	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R335	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R336	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R337	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R338	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R339	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R340	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R343	1-216-295-00	CONDCTOR, CHIP				
R344	1-216-295-00	CONDCTOR, CHIP				
R345	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R346	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R347	1-216-015-00	METAL GLAZE	39	5%	1/10W	
R348	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R349	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R350	1-216-079-00	METAL GLAZE	18K	5%	1/10W	
R351	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R352	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R353	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R354	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R355	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R356	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R357	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R358	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R359	1-218-753-11	METAL CHIP	110K	0.50%	1/10W	
R360	1-216-699-11	METAL CHIP	100K	0.50%	1/10W	
R361	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R362	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R601	1-247-903-00	CARBON	1M	5%	1/4W	
R602	1-247-903-00	CARBON	1M	5%	1/4W	
R603	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R604	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R605	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R606	1-249-426-11	CARBON	5.6K	5%	1/4W	
R607	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R608	1-216-664-11	METAL CHIP	3.6K	0.50%	1/10W	
R609	1-216-689-11	METAL GLAZE	39K	5%	1/10W	
R610	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R611	1-216-660-11	METAL CHIP	2.4K	0.50%	1/10W	
R612	1-208-800-11	METAL CHIP	5.6K	0.50%	1/10W	
R613	1-249-420-11	CARBON	1.8K	5%	1/4W	
R614	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R615	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R616	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R618	1-216-198-91	METAL GLAZE	1K	5%	1/8W	
R619	1-249-393-11	CARBON	10	5%	1/4W	
R620	1-249-393-11	CARBON	10	5%	1/4W	
R621	1-249-397-11	CARBON	22	5%	1/4W	F
R622	1-249-441-11	CARBON	100K	5%	1/4W	
R623	1-249-397-11	CARBON	22	5%	1/4W	F
R624	1-249-441-11	CARBON	100K	5%	1/4W	
R626	1-219-440-11	RES, METAL PLATE 0.47				
R627	1-215-882-00	METAL OXIDE	22	5%	2W	F
R628	1-216-186-00	METAL GLAZE	330	5%	1/8W	
R629	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R630	1-215-882-00	METAL OXIDE	22	5%	2W	F
R631	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R632	1-216-186-00	METAL GLAZE	330	5%	1/8W	
R633	1-216-352-11	METAL OXIDE	1.8	5%	1W	F
R634	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R635	1-216-105-00	METAL GLAZE	220K	5%	1/10W	
R636	1-216-105-00	METAL GLAZE	220K	5%	1/10W	
R651	1-249-377-11	CARBON	0.47	5%	1/4W	F
R652	1-249-417-11	CARBON	1K	5%	1/4W	
R653	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R654	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R655	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R656	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R657	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R658	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R659	1-249-422-11	CARBON	2.7K	5%	1/4W	F
R660	1-249-437-11	CARBON	47K	5%	1/4W	
R661	1-249-405-11	CARBON	100	5%	1/4W	F
R662	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R663	1-208-801-11	METAL CHIP	6.2K	0.50%	1/10W	
R664	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R665	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R666	1-208-812-11	METAL CHIP	18K	0.50%	1/10W	
R667	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R669	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

A C

REF.NO.	PART NO.	DESCRIPTION				REMARK
R670	1-249-377-11	CARBON	0.47	5%	1/4W	F
R671	1-249-377-11	CARBON	0.47	5%	1/4W	F
R672	1-249-377-11	CARBON	0.47	5%	1/4W	F
R673	1-249-377-11	CARBON	0.47	5%	1/4W	F
R674	1-249-377-11	CARBON	0.47	5%	1/4W	F
R1200	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R1201	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R1202	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R1204	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R1205	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R1206	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R1207	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R1208	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R1209	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R1210	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R1211	1-216-027-00	METAL GLAZE	120	5%	1/10W	
R1212	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R1213	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R1214	1-216-027-00	METAL GLAZE	120	5%	1/10W	
R1215	1-216-295-00	CONDCTOR, CHIP				
R1216	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R1218	1-216-295-00	CONDCTOR, CHIP				
R1219	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R1221	1-216-295-00	CONDCTOR, CHIP				
R1222	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R1224	1-216-295-00	CONDCTOR, CHIP				
R1225	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R1226	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R1227	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R1228	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R1229	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R1230	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R2002	1-216-022-00	METAL GLAZE	75	5%	1/10W	
R2003	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R2004	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R2005	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R2006	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R2007	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R2008	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R2009	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R2017	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R2018	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R2019	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R2020	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R2021	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R2025	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R2026	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R2027	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R2601	1-216-097-00	METAL GLAZE	100K	5%	1/10W	

<TRANSFORMER>

REF.NO.	PART NO.	DESCRIPTION
T650	⚠ 1-426-970-11	TRANSFORMER, CONVERTER (PIT)

<CRYSTAL>

REF.NO.	PART NO.	DESCRIPTION
X001	1-760-180-11	VIBRATOR, CRYSTAL
X1200	1-760-535-21	VIBRATOR, CRYSTAL
X2001	1-760-509-21	VIBRATOR, CRYSTAL

****

*A-1331-389-A C BOARD, COMPLETE (KV-W32MN11/MH11)
****

*A-1331-391-A C BOARD, COMPLETE (KV-W28MN11/MH11)
****

4-382-854-11 SCREW (M3X10), P, SW (+)

<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION			REMARK
C701	1-162-114-00	CERAMIC	0.0047MF		2KV
C703	1-107-651-11	ELECT	4.7MF	20%	250V
C704	1-130-202-91	FILM	0.022MF	5%	400V
C711	1-102-947-00	CERAMIC	10PF	0.5PF	50V
C712	1-102-820-00	CERAMIC	330PF	5%	50V
C713	1-102-824-00	CERAMIC	470PF	5%	50V
C714	1-102-820-00	CERAMIC	330PF	5%	50V
C716	1-126-933-11	ELECT	100MF	20%	16V

<CONNECTOR>

REF.NO.	PART NO.	DESCRIPTION
CN701	*1-573-964-11	PIN, CONNECTOR (PC BOARD) 6P
CN703	*1-564-511-11	PLUG, CONNECTOR 8P
CN704	1-695-915-11	TAB (CONTACT)

<DIODE>

REF.NO.	PART NO.	DESCRIPTION
D701	8-719-911-19	DIODE 1SS119
D702	8-719-911-19	DIODE 1SS119
D703	8-719-911-19	DIODE 1SS119
D704	8-719-911-19	DIODE 1SS119
D705	8-719-911-19	DIODE 1SS119
D706	8-719-911-19	DIODE 1SS119
D707	8-719-911-19	DIODE 1SS119
D708	8-719-911-19	DIODE 1SS119
D709	8-719-911-19	DIODE 1SS119
D710	8-719-911-19	DIODE 1SS119
D711	8-719-911-19	DIODE 1SS119
D712	8-719-911-19	DIODE 1SS119
D714	8-719-110-03	DIODE RD7.5ESB2

<SOCKET>

REF.NO.	PART NO.	DESCRIPTION
J701	⚠ 1-540-223-11	SOCKET, PICTURE TUBE

<COIL>

REF.NO.	PART NO.	DESCRIPTION	
L701	1-410-667-31	INDUCTOR	22UH
L703	1-408-412-00	INDUCTOR	18UH
L705	1-408-412-00	INDUCTOR	18UH
L707	1-408-412-00	INDUCTOR	18UH

<TRANSISTOR>

REF.NO.	PART NO.	DESCRIPTION
Q701	8-729-326-11	TRANSISTOR 2SC2611
Q702	8-729-326-11	TRANSISTOR 2SC2611
Q703	8-729-326-11	TRANSISTOR 2SC2611
Q704	8-729-326-11	TRANSISTOR 2SC2611
Q705	8-729-326-11	TRANSISTOR 2SC2611
Q706	8-729-326-11	TRANSISTOR 2SC2611
Q707	8-729-200-17	TRANSISTOR 2SA1091-O
Q708	8-729-200-17	TRANSISTOR 2SA1091-O
Q709	8-729-200-17	TRANSISTOR 2SA1091-O
Q710	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q711	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q712	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q714	8-729-255-12	TRANSISTOR 2SC2551-O

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

<RESISTOR>

REF.NO.	PART NO.	DESCRIPTION				REMARK
R701	1-202-883-11	SOLID	680K	20%	1/2W	
R702	1-202-838-00	SOLID	100K	20%	1/2W	
R703	1-202-813-00	SOLID	22K	20%	1/2W	
R705	1-216-367-11	METAL OXIDE	0.68	5%	2W	F
R707	1-249-420-11	CARBON	1.8K	5%	1/4W	
R708	1-249-420-11	CARBON	1.8K	5%	1/4W	
R709	1-249-420-11	CARBON	1.8K	5%	1/4W	
R710	1-215-922-11	METAL OXIDE	6.8K	5%	3W	F
R711	1-202-549-00	SOLID	100	20%	1/2W	
R712	1-215-922-11	METAL OXIDE	6.8K	5%	3W	F
R713	1-202-549-00	SOLID	100	20%	1/2W	
R714	1-215-922-11	METAL OXIDE	6.8K	5%	3W	F
R715	1-202-549-00	SOLID	100	20%	1/2W	
R716	1-249-405-11	CARBON	100	5%	1/4W	F
R717	1-249-405-11	CARBON	100	5%	1/4W	F
R718	1-249-405-11	CARBON	100	5%	1/4W	F
R720	1-249-417-11	CARBON	1K	5%	1/4W	F
R722	1-249-417-11	CARBON	1K	5%	1/4W	F
R724	1-249-417-11	CARBON	1K	5%	1/4W	F
R725	1-249-423-11	CARBON	3.3K	5%	1/4W	
R726	1-249-423-11	CARBON	3.3K	5%	1/4W	
R727	1-249-421-11	CARBON	2.2K	5%	1/4W	
R728	1-249-408-11	CARBON	180	5%	1/4W	
R729	1-249-408-11	CARBON	180	5%	1/4W	
R730	1-249-408-11	CARBON	180	5%	1/4W	
R731	1-249-397-11	CARBON	22	5%	1/4W	
R732	1-249-397-11	CARBON	22	5%	1/4W	
R733	1-249-397-11	CARBON	22	5%	1/4W	
R734 ⚠	1-202-549-81	SOLID	100	20%	1/2W	
R738	1-247-807-31	CARBON	100	5%	1/4W	
R739	1-247-807-31	CARBON	100	5%	1/4W	
R740	1-247-807-31	CARBON	100	5%	1/4W	
R743	1-249-440-11	CARBON	82K	5%	1/4W	
R747	1-216-489-11	METAL OXIDE	27K	5%	3W	F
R749	1-216-490-11	METAL OXIDE	39K	5%	3W	F
R751	1-215-926-00	METAL OXIDE	33K	5%	3W	F
R753	1-249-429-11	CARBON	10K	5%	1/4W	
R763	1-247-887-00	CARBON	220K	5%	1/4W	
R765	1-249-441-11	CARBON	100K	5%	1/4W	
R766	1-249-441-11	CARBON	100K	5%	1/4W	

<VARIABLE RESISTOR>

REF.NO.	PART NO.	DESCRIPTION
RV701	1-230-641-11	RES, ADJ, METAL GLAZE 2.2M
RV702⚠	1-241-714-21	RES, ADJ, METAL FILM 110M
RV704	1-237-524-21	RES, ADJ, CARBON 1M
RV705	1-228-999-00	RES, ADJ, CARBON 470K

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*A-1341-842-A D1 BOARD, COMPLETE (KV-W28MN11/MH11)
****

*A-1341-850-A D1 BOARD, COMPLETE (KV-W32MN11/MH11)
****

<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION				REMARK
C2807	1-136-157-00	FILM	0.022MF	5%	50V	
C2808	1-136-157-00	FILM	0.022MF	5%	50V	
C2813	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V	
C2814	1-124-126-00	ELECT	47MF	20%	16V	
C2815	1-130-471-00	MYLAR	0.001MF	5%	50V	
C2816	1-136-161-00	FILM	0.047MF	5%	50V	
C2817	1-136-161-00	FILM	0.047MF	5%	50V	
C2818	1-129-765-00	FILM	0.047MF	10%	200V	
C2819	1-130-475-00	MYLAR	0.0022MF	5%	50V	
C2820	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	
C2821	1-136-157-00	FILM	0.022MF	5%	50V	
C2822	1-136-177-00	FILM	1MF	5%	50V	
C2823	1-126-935-11	ELECT	470MF	20%	16V	
C2824	1-124-126-00	ELECT	47MF	20%	16V	(KV-W28MN11/MH11)
C2825	1-124-126-00	ELECT	47MF	20%	16V	(KV-W28MN11/MH11)
C2826	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	(KV-W28MN11/MH11)
C2827	1-163-020-00	CERAMIC CHIP	0.0082MF	10%	50V	
C2901	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	
C2902	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V	
C2903	1-129-763-91	FILM	0.033MF	10%	200V	
C2907	1-130-471-00	FILM	0.001MF	5%	50V	
C2908	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C2916	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C2918	1-102-110-00	CERAMIC	220PF	10%	50V	
C2922	1-129-704-91	FILM	0.0015MF	10%	630V	
C2924	1-136-161-00	FILM	0.047MF	5%	50V	
C4800	1-126-952-11	ELECT	1000MF	20%	16V	
C4906	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C5801	1-126-964-11	ELECT	10MF	20%	50V	

<CONNECTOR>

REF.NO.	PART NO.	DESCRIPTION
CN2800	1-764-811-11	CONNECTOR, BOARD TO BOARD 10P
CN2801	*1-560-436-00	HORIZONTAL PIN ASSY 3P
CN2900	1-764-811-11	CONNECTOR, BOARD TO BOARD 10P
CN2901	1-564-524-11	PLUG, CONNECTOR 9P
CN5801	*1-564-518-11	PLUG, CONNECTOR 3P

<DIODE>

REF.NO.	PART NO.	DESCRIPTION
D2802	8-719-911-19	DIODE 1SS119
D2803	8-719-911-19	DIODE 1SS119
D2804	8-719-510-64	DIODE S2LA20F
D2805	8-719-911-19	DIODE 1SS119
D2806	8-719-911-19	DIODE 1SS119
D2807	8-719-911-19	DIODE 1SS119
D2808	8-719-911-19	DIODE 1SS119
D2809	8-719-911-19	DIODE 1SS119
D2902	8-719-911-19	DIODE 1SS119
D2903	8-719-911-19	DIODE 1SS119
D2904	8-719-911-19	DIODE 1SS119
D2905	8-719-979-85	DIODE EGP20G
D5801	8-719-911-19	DIODE 1SS119
D5802	8-719-911-19	DIODE 1SS119

<IC>

REF.NO.	PART NO.	DESCRIPTION	REMARK
IC2802	8-752-052-88	IC CXA1526P	
IC2803	8-759-912-77	IC LM324N	
IC2804	8-759-135-80	IC UPC358C	(KV-W28MN11/MH11)
IC2805	8-759-325-48	IC CA0005AD	
IC2901	8-759-729-03	IC NJM2903D	(KV-W28MN11/MH11)
IC2903	8-759-729-03	IC NJM2903D	
IC5801	8-759-603-37	IC M5216P	

<CONDCTOR CHIP>

D1

REF.NO.	PART NO.	DESCRIPTION				REMARK
JR2904	1-216-295-00	CONDCTOR, CHIP				
JR2905	1-216-295-00	CONDCTOR, CHIP				
JR4902	1-216-295-00	CONDCTOR, CHIP				
JR4903	1-216-295-00	CONDCTOR, CHIP				
JR5801	1-216-295-00	CONDCTOR, CHIP				

<COIL>

REF.NO.	PART NO.	DESCRIPTION	REMARK
L2801	1-406-664-21	COIL, CHOKE 68UH	
L2802	1-406-989-21	COIL, CHOKE 10MMH	
L2907	1-406-674-11	COIL, CHOKE 3.3MMH	

<TRANSISTOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
Q2802	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q2804	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q2805	8-729-216-22	TRANSISTOR 2SA1162-G	
Q2806	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q2807	8-729-140-96	TRANSISTOR 2SD774-34	
Q2808	8-729-140-97	TRANSISTOR 2SB734-34	
Q2809	8-729-140-96	TRANSISTOR 2SD774-34	
Q2810	8-729-216-22	TRANSISTOR 2SA1162-G	
Q2811	8-729-140-97	TRANSISTOR 2SB734-34	
Q2812	8-729-015-02	TRANSISTOR 2SK940	
Q2813	8-729-216-22	TRANSISTOR 2SA1162-G	(KV-W28MN11/MH11)
Q2814	8-729-230-49	TRANSISTOR 2SC2712-YG	(KV-W28MN11/MH11)
Q2901	8-729-216-22	TRANSISTOR 2SA1162-G	
Q2906	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q2907	8-729-931-45	TRANSISTOR IRF614	
Q4904	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q5801	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q5802	8-729-230-49	TRANSISTOR 2SC2712-YG	

<RESISTOR>

REF.NO.	PART NO.	DESCRIPTION				REMARK
R2801	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R2802	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R2803	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R2804	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R2806	1-216-134-00	METAL GLAZE	2.2	5%	1/8W	
R2807	1-216-134-00	METAL GLAZE	2.2	5%	1/8W	
R2808	1-216-109-00	METAL GLAZE	330K	5%	1/10W	
R2823	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R2824	1-208-824-11	METAL CHIP	56K	0.50%	1/10W	
R2825	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R2831	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R2832	1-208-817-11	METAL CHIP	30K	0.50%	1/10W	
R2833	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R2834	1-216-295-00	CONDCTOR, CHIP				
R2835	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R2836	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R2837	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R2838	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R2839	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R2840	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R2841	1-216-081-00	METAL GLAZE	22K	5%	1/10W	(KV-W28MN11/MH11)
R2841	1-216-089-00	METAL GLAZE	47K	5%	1/10W	(KV-W32MN11/MH11)
R2842	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R2843	1-216-105-00	METAL GLAZE	220K	5%	1/10W	
R2844	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R2845	1-216-089-00	METAL GLAZE	47K	5%	1/10W	

REF.NO.	PART NO.	DESCRIPTION				REMARK
R2846	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R2848	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R2850	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R2851	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R2852	1-216-085-00	METAL GLAZE	33K	5%	1/10W	(KV-W28MN11/MH11)
R2852	1-216-073-00	METAL GLAZE	10K	5%	1/10W	(KV-W32MN11/MH11)
R2853	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R2854	1-249-393-11	CARBON	10	5%	1/4W	F
R2855	1-215-883-11	METAL OXIDE	33	5%	2W	F
R2856	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R2857	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R2858	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R2859	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R2860	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R2861	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R2862	1-214-657-11	METAL	1	1%	1/4W	
R2863	1-216-452-11	METAL OXIDE	180	5%	2W	F
R2864	1-216-452-11	METAL OXIDE	180	5%	2W	F
R2865	1-215-860-11	METAL OXIDE	33	5%	1W	F
R2866	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R2867	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R2868	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R2870	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R2871	1-216-689-11	METAL GLAZE	39K	5%	1/10W	(KV-W28MN11/MH11)
R2872	1-216-073-00	METAL GLAZE	10K	5%	1/10W	(KV-W28MN11/MH11)
R2873	1-216-635-11	METAL CHIP	220	0.50%	1/10W	(KV-W28MN11/MH11)
R2874	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	(KV-W28MN11/MH11)
R2875	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	(KV-W28MN11/MH11)
R2876	1-216-647-11	METAL CHIP	680	0.50%	1/10W	(KV-W28MN11/MH11)
R2877	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	(KV-W28MN11/MH11)
R2878	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	(KV-W28MN11/MH11)
R2879	1-260-095-11	CARBON	470	5%	1/2W	(KV-W28MN11/MH11)
R2880	1-260-095-11	CARBON	470	5%	1/2W	(KV-W28MN11/MH11)
R2881	1-216-689-11	METAL GLAZE	39K	5%	1/10W	(KV-W28MN11/MH11)
R2882	1-216-081-00	METAL GLAZE	22K	5%	1/10W	(KV-W28MN11/MH11)
R2883	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R2901	1-216-295-00	CONDCTOR, CHIP				
R2902	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R2903	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R2904	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R2905	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R2914	1-218-768-11	METAL CHIP	470K	0.50%	1/10W	
R2915	1-218-768-11	METAL CHIP	470K	0.50%	1/10W	
R2916	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R2917	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R2918	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R2919	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R2933	1-216-682-11	METAL CHIP	20K	0.50%	1/10W	(KV-W28MN11/MH11)

REF.NO.	PART NO.	DESCRIPTION				REMARK
R2933	1-208-811-11	METAL CHIP	16K	0.50%	1/10W	(KV-W32MN11/MH11)
R2934	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R2935	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R2936	1-220-262-11	METAL GLAZE	680	5%	1/4W	
R2937	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R4815	1-215-908-00	METAL OXIDE	33	5%	3W	F (KV-W28MN11/MH11)
R4815	1-216-446-00	METAL OXIDE	18	5%	2W	F (KV-W32MN11/MH11)
R4911	1-216-685-11	METAL CHIP	27K	0.50%	1/10W	
R4912	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R4913	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R4920	1-216-198-91	METAL GLAZE	1K	5%	1/8W	
R5801	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R5802	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R5803	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R5804	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R5805	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R5806	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R5807	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R5808	1-216-081-00	METAL GLAZE	22K	5%	1/10W	

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*A-1342-258-A VM BOARD, COMPLETE
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4-382-854-11 SCREW (M3X10), P, SW (+)

<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION			
C1701	1-126-940-11	ELECT	330MF	20%	16V
C1704	1-161-830-00	CERAMIC	0.0047MF		500V
C1705	1-126-934-11	ELECT	220MF	20%	16V
C1706	1-107-638-11	ELECT	33MF	20%	160V
C1707	1-126-964-11	ELECT	10MF	20%	50V
C1708	1-101-006-00	CERAMIC	0.047MF		50V
C1709	1-129-702-00	FILM	0.001MF	10%	630V
C1710	1-106-367-00	MYLAR	0.01MF	10%	200V
C1711	1-162-318-11	CERAMIC	0.001MF	10%	500V
C1712	1-107-667-11	ELECT	2.2MF	20%	400V
C1713	1-162-318-11	CERAMIC	0.001MF	10%	500V
C1714	1-106-367-00	MYLAR	0.01MF	10%	200V
C1715	1-102-973-00	CERAMIC	100PF	5%	50V
C1716	1-126-964-11	ELECT	10MF	20%	50V
C1718	1-126-934-11	ELECT	220MF	20%	16V
C1719	1-106-222-00	MYLAR	0.12MF	10%	100V

<CONNECTOR>

CN1701*1-564-512-11 PLUG, CONNECTOR 9P

<DIODE>

REF.NO.	PART NO.	DESCRIPTION
D1701	8-719-911-19	DIODE 1SS119
D1702	8-719-911-19	DIODE 1SS119
D1703	8-719-911-19	DIODE 1SS119
D1704	8-719-110-88	DIODE RD39ES-T1B
D1705	8-719-110-88	DIODE RD39ES-T1B

<COIL>

L1702 1-408-409-00 INDUCTOR 10UH

<TRANSISTOR>

REF.NO.	PART NO.	DESCRIPTION
Q1701	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q1702	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q1703	8-729-017-05	TRANSISTOR 2SA1837
Q1704	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q1705	8-729-017-06	TRANSISTOR 2SC4793
Q1706	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q1707	8-729-142-86	TRANSISTOR 2SC3733
Q1708	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q1709	8-729-255-12	TRANSISTOR 2SC2551-O

<RESISTOR>

REF.NO.	PART NO.	DESCRIPTION				REMARK
R1701	1-247-807-31	CARBON	100	5%	1/4W	
R1702	1-249-416-11	CARBON	820	5%	1/4W	
R1703	1-247-807-31	CARBON	100	5%	1/4W	
R1704	1-249-418-11	CARBON	1.2K	5%	1/4W	
R1705	1-260-313-51	CARBON	56	5%	1/2W	
R1706	1-249-417-11	CARBON	1K	5%	1/4W	F
R1707	1-249-411-11	CARBON	330	5%	1/4W	
R1709	1-249-413-11	CARBON	470	5%	1/4W	
R1710	1-249-385-11	CARBON	2.2	5%	1/4W	F
R1711	1-249-435-11	CARBON	33K	5%	1/4W	
R1712	1-249-436-11	CARBON	39K	5%	1/4W	
R1713	1-249-436-11	CARBON	39K	5%	1/4W	
R1714	1-249-429-11	CARBON	10K	5%	1/4W	
R1715	1-215-912-11	METAL OXIDE	150	5%	3W	F
R1716	1-249-417-11	CARBON	1K	5%	1/4W	F
R1717	1-249-435-11	CARBON	33K	5%	1/4W	
R1718	1-249-412-11	CARBON	390	5%	1/4W	
R1719	1-249-417-11	CARBON	1K	5%	1/4W	
R1720	1-249-417-11	CARBON	1K	5%	1/4W	
R1721	1-249-417-11	CARBON	1K	5%	1/4W	
R1722	1-249-385-11	CARBON	2.2	5%	1/4W	F
R1723	1-249-426-11	CARBON	5.6K	5%	1/4W	
R1724	1-249-436-11	CARBON	39K	5%	1/4W	
R1725	1-249-417-11	CARBON	1K	5%	1/4W	
R1726	1-249-410-11	CARBON	270	5%	1/4W	
R1727	1-249-402-11	CARBON	56	5%	1/4W	F
R1728	1-249-438-11	CARBON	56K	5%	1/4W	
R1729	1-216-451-11	METAL OXIDE	120	5%	2W	F
R1731	1-249-425-11	CARBON	4.7K	5%	1/4W	
R1732	1-249-426-11	CARBON	5.6K	5%	1/4W	
R1735	1-249-426-11	CARBON	5.6K	5%	1/4W	

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*A-1346-262-A D BOARD, COMPLETE (KV-W28MN11/MH11)
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*A-1346-266-A D BOARD, COMPLETE (KV-W32MN11/MH11)
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4-037-121-01 SPACER, MICA
4-382-854-11 SCREW (M3X10), P, SW (+)

<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION			
C501	1-124-903-11	ELECT	1MF	20%	50V
C502	1-124-903-11	ELECT	1MF	20%	50V
C503	1-123-024-21	ELECT	33MF		160V
C504	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C506	1-104-665-11	ELECT	100MF	20%	25V
C508	1-163-275-11	CERAMIC CHIP	0.001MF	5%	50V

D

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION			REMARK
C509	1-124-927-11	ELECT	4.7MF	20%	50V
C510	1-126-233-11	ELECT	22MF	20%	50V
C511	1-124-126-00	ELECT	47MF	20%	16V
C512	1-106-379-12	MYLAR	0.033MF	10%	200V
C515	1-124-927-11	ELECT	4.7MF	20%	50V
C516	1-124-927-11	ELECT	4.7MF	20%	50V
C518	1-124-903-11	ELECT	1MF	20%	50V
C519	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C523	1-106-353-00	MYLAR	0.0027MF	10%	100V
C524	1-124-903-11	ELECT	1MF	20%	50V
C525	1-164-182-11	CERAMIC CHIP	0.0033MF	10%	50V
C526	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C527	1-163-139-00	CERAMIC CHIP	820PF	5%	50V
C528	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C529	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C537	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C538	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C539	1-126-934-11	ELECT	220MF	20%	16V
C544	1-136-334-91	FILM	0.033MF	5%	630V
C546	1-110-632-11	FILM	0.019MF	3%	1.8KV
C547	1-162-117-00	CERAMIC	100PF	10%	500V
C548	1-110-630-11	FILM	0.62MF	5%	400V
C551	1-106-379-12	MYLAR	0.033MF	10%	200V
C552	1-106-343-00	MYLAR	0.001MF	10%	200V
C554	1-136-757-11	FILM	0.33MF	5%	400V
C557	1-110-630-11	FILM	0.62MF	5%	400V
C562	1-126-941-11	ELECT	470MF	20%	25V
C563	1-126-941-11	ELECT	470MF	20%	25V
C564	1-107-655-11	ELECT	47MF	20%	250V
C565	1-102-228-00	CERAMIC	470PF	10%	500V
C566	1-102-228-00	CERAMIC	470PF	10%	500V
C567	1-102-228-00	CERAMIC	470PF	10%	500V
C568	1-162-114-00	CERAMIC	0.0047MF		2KV
C569	1-106-381-12	MYLAR	0.039MF	99%	200V
C571	1-107-650-11	ELECT	3.3MF	20%	250V
C572	1-128-577-11	ELECT	0.47MF	20%	100V
C573	1-102-030-00	CERAMIC	330PF	10%	500V
C574	1-106-383-00	MYLAR	0.047MF	10%	200V
C575	1-163-001-11	CERAMIC CHIP	220PF	10%	50V
C576	⚠ 1-162-129-91	CERAMIC	150PF	10%	2KV
C577	⚠ 1-162-116-91	CERAMIC	680PF	10%	2KV
C578	1-106-359-00	MYLAR	0.0047MF	10%	200V
C579	⚠ 1-162-116-91	CERAMIC	680PF	10%	2KV
C580	1-123-024-21	ELECT	33MF		160V
C581	1-106-361-00	MYLAR	0.0056MF	10%	100V
C582	1-124-126-00	ELECT	47MF	20%	16V
C585	1-130-471-00	FILM	0.001MF	5%	50V
C1551	1-124-903-11	ELECT	1MF	20%	50V
C1553	1-126-941-11	ELECT	470MF	20%	25V
C1554	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C1556	1-124-122-11	ELECT	100MF	20%	50V
C1557	1-102-942-00	CERAMIC	5PF	0.5PF	50V
C1558	1-101-821-00	CERAMIC	0.0022MF		500V
C1559	1-106-383-00	MYLAR	0.047MF	10%	100V
C1560	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C1562	1-137-423-11	MYLAR	0.15MF	10%	100V
C1563	1-126-941-11	ELECT	470MF	20%	25V
C1564	1-136-853-11	FILM	0.56MF	5%	200V
C1595	1-136-177-00	FILM	1MF	5%	50V
C2501	1-104-665-11	ELECT	100MF	20%	25V
C2502	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C2503	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C2504	1-104-665-11	ELECT	100MF	20%	25V
C2505	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C2506	1-163-222-11	CERAMIC CHIP	5PF	0.25PF	50V
C2507	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C2508	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C2509	1-163-007-11	CERAMIC CHIP	680PF	10%	50V
C2510	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C2511	1-124-903-11	ELECT	1MF	20%	50V
C2512	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C2513	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C3501	1-162-558-11	CERAMIC	100PF	10%	2KV
C3502	1-162-558-11	CERAMIC	100PF	10%	2KV
C3552	1-102-244-00	CERAMIC	220PF	10%	500V
C3553	1-129-928-91	FILM	0.0027MF	5%	630V (KV-W28MN11/MH11)
C3553	1-136-557-11	FILM	0.0033MF	10%	630V (KV-W32MN11/MH11)
C3554	1-129-718-00	FILM	0.022MF	10%	630V
C4601	1-124-126-00	ELECT	47MF	20%	16V
C4602	1-124-126-00	ELECT	47MF	20%	16V
C4603	1-124-126-00	ELECT	47MF	20%	16V
		<CONNCTOR>			
CN501	1-764-607-11	CONNECTOR, BOARD TO BOARD 8P			
CN502	1-764-607-11	CONNECTOR, BOARD TO BOARD 8P			
CN503	1-764-607-11	CONNECTOR, BOARD TO BOARD 8P			
CN504	1-764-818-11	CONNECTOR, BOARD TO BOARD 10P			
CN505	1-764-607-11	CONNECTOR, BOARD TO BOARD 8P			
CN506	1-764-818-11	CONNECTOR, BOARD TO BOARD 10P			
CN508	1-764-812-11	CONNECTOR, BOARD TO BOARD 11P			
CN513	1-695-915-11	TAB (CONTACT)			
CN514	1-695-915-11	TAB (CONTACT)			
CN515	1-766-244-11	PIN, CONNECTOR (PC BOARD) 6P			
CN516	1-764-607-11	CONNECTOR, BOARD TO BOARD 8P			
CN517	1-764-821-11	CONNECTOR, BOARD TO BOARD 15P			
CN525	*1-580-798-11	CONNECTOR PIN (DY) 6P			
		<DIODE>			
D501	8-719-052-09	DIODE FMG-36S-LF024-104			
D502	8-719-404-46	DIODE MA110			
D503	8-719-404-46	DIODE MA110			
D504	8-719-404-46	DIODE MA110			
D505	8-719-914-43	DIODE DAN202K			
D506	8-719-404-46	DIODE MA110			
D508	8-719-914-44	DIODE DAP202K			
D509	8-719-403-02	DIODE MA3240M-TX			
D511	8-719-404-46	DIODE MA110			
D512	8-719-105-82	DIODE RD5.1M-B2			
D514	8-719-159-85	DIODE RD2.0MB			
D515	8-719-404-46	DIODE MA110			
D516	8-719-404-46	DIODE MA110			
D517	8-719-404-46	DIODE MA110			
D522	8-719-045-42	DIODE DD52RC			
D524	8-719-302-43	DIODE EL1Z			
D525	8-719-302-43	DIODE EL1Z			
D526	8-719-302-43	DIODE EL1Z			
D527	8-719-302-43	DIODE EL1Z			
D528	8-719-302-43	DIODE EL1Z			
D529	8-719-908-03	DIODE GP08D			
D530	8-719-018-82	DIODE RGP02-20EL-6394			
D531	8-719-908-03	DIODE GP08D			
D535	8-719-105-82	DIODE RD5.1M-B2			
D536	8-719-404-46	DIODE MA110			

REF.NO.	PART NO.	DESCRIPTION	REMARK
D570	8-719-110-76	DIODE RD33ESB1	
D571	8-719-404-46	DIODE MA110	
D1551	8-719-923-86	DIODE MTZJ-T-77-15	
D1557	8-719-908-03	DIODE GP08D	
D2501	8-719-914-43	DIODE DAN202K	
D2503	8-719-914-42	DIODE DA204K	
D2504	8-719-401-32	DIODE MA3047M-TX	
D2505	8-719-401-32	DIODE MA3047M-TX	
D3550	8-719-970-87	DIODE ERA38-06	
D3551	8-719-300-33	DIODE RU-3AM	
D3552	8-719-970-87	DIODE ERA38-06	

<FERRITE BEAD>

REF.NO.	PART NO.	DESCRIPTION	REMARK
FB501	1-410-396-41	FERRITE BEAD INDUCTOR 0.45UH	
FB502	1-410-396-41	FERRITE BEAD INDUCTOR 0.45UH	
FB3550	1-410-397-21	FERRITE BEAD INDUCTOR 1.1UH	

<IC>

REF.NO.	PART NO.	DESCRIPTION	REMARK
IC502	8-759-083-85	IC LA7856A	
IC507	8-759-981-65	IC LM2903M	
IC1551	8-759-192-71	IC STV9379	
IC2501	8-759-729-03	IC NJM2903D	
IC2502	8-759-729-03	IC NJM2903D	
IC4601	8-759-189-48	IC PQ12RE11	
IC4602	8-759-701-59	IC NJM78M09FA	

<CONDCTOR CHIP>

REF.NO.	PART NO.	DESCRIPTION	REMARK
JR1	1-216-295-00	CONDCTOR, CHIP	
JR501	1-216-295-00	CONDCTOR, CHIP	
JR503	1-216-295-00	CONDCTOR, CHIP	
JR510	1-216-295-00	CONDCTOR, CHIP	

<COIL>

REF.NO.	PART NO.	DESCRIPTION	REMARK
L501	1-406-977-21	COIL, CHOKE 100UH	
L504	1-422-613-11	COIL, AIR CORE	
L509	1-459-474-11	COIL (WITH CORE)	
L510	1-412-537-31	INDUCTOR 100UH	
L511	1-412-537-31	INDUCTOR 100UH	
L512	1-412-537-31	INDUCTOR 100UH	
L513	1-459-111-00	COIL, DRAM CORE (CDI)	
L514	1-412-528-11	INDUCTOR 18UH	
L516	1-411-188-11	COIL, CHOKE 18.5UH	
L517	1-412-552-11	INDUCTOR 2.2MMH	
L519	1-422-613-11	COIL, AIR CORE	
L1551	1-412-532-11	INDUCTOR 39UH	
L1552	1-412-524-11	INDUCTOR 8.2UH	
L1553	1-412-532-11	INDUCTOR 39UH	
L3550	1-406-672-11	COIL, CHOKE 1.5MMH	

<TRANSISTOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
Q501	8-729-900-51	TRANSISTOR DTA114TK	
Q502	8-729-901-01	TRANSISTOR DTC144EK	
Q506	8-729-200-17	TRANSISTOR 2SA1091-O	
Q507	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q508	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q511	8-729-931-45	TRANSISTOR IRF614	
Q512	8-729-119-80	TRANSISTOR 2SC2688-LK	
Q514	8-729-017-64	TRANSISTOR 2SC3997-YB	
Q555	8-729-216-22	TRANSISTOR 2SA1162-G	
Q1551	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q1552	8-729-030-45	TRANSISTOR IRFIBC30G-LF	
Q2501	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q2503	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q2504	8-729-216-22	TRANSISTOR 2SA1162-G	
Q2505	8-729-216-22	TRANSISTOR 2SA1162-G	
Q2506	8-729-216-22	TRANSISTOR 2SA1162-G	
Q3550	8-729-011-06	TRANSISTOR 2SC3840K	

<RESISTOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
R501	1-215-452-00	METAL 20K 1% 1/4W	
R502	1-216-295-00	CONDCTOR, CHIP	
R503	1-216-111-00	METAL GLAZE 390K 5% 1/10W	
R504	1-216-055-00	METAL GLAZE 1.8K 5% 1/10W	(KV-W28MN11/MH11)
R504	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	(KV-W32MN11/MH11)
R506	1-215-909-11	METAL OXIDE 47 5% 3W	F
R507	1-216-037-00	METAL GLAZE 330 5% 1/10W	
R508	1-216-691-11	METAL CHIP 47K 0.50% 1/10W	
R509	1-216-667-11	METAL CHIP 4.7K 0.50% 1/10W	
R510	1-216-683-11	METAL CHIP 22K 0.50% 1/10W	
R512	1-216-650-11	METAL CHIP 910 0.50% 1/10W	
R513	1-215-476-00	METAL 200K 1% 1/4W	
R514	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R515	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R516	1-220-317-91	METAL GLAZE 220K 5% 1/4W	
R517	1-216-385-11	METAL OXIDE 0.47 5% 3W	F
R518	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R519	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R520	1-215-909-11	METAL OXIDE 47 5% 3W	F
R521	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R522	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R523	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R524	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R525	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R526	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R527	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R528	1-216-675-11	METAL CHIP 10K 0.50% 1/10W	
R529	1-216-683-11	METAL CHIP 22K 0.50% 1/10W	
R530	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R531	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R532	1-214-753-00	METAL 10K 1% 1/4W	
R533	1-202-830-00	SOLID 10K 10% 1/2W	
R535	1-202-830-00	SOLID 10K 10% 1/2W	
R536	1-208-817-11	METAL CHIP 30K 0.50% 1/10W	
R537	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R538	1-216-081-00	METAL GLAZE 22K 5% 1/10W	(KV-W28MN11/MH11)
R538	1-216-079-00	METAL GLAZE 18K 5% 1/10W	(KV-W32MN11/MH11)
R539	1-216-017-00	METAL GLAZE 47 5% 1/10W	
R540	1-216-434-11	METAL OXIDE 1.8K 5% 1W	F
R541	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R542	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R543	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R544	1-216-345-11	METAL OXIDE 0.47 5% 1W	F
R545	1-249-377-11	CARBON 0.47 5% 1/4W	F
R546	1-249-377-11	CARBON 0.47 5% 1/4W	F
R547	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R548	1-216-677-11	METAL CHIP 12K 0.50% 1/10W	
R549	1-249-398-11	CARBON 27 5% 1/4W	F
R550	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

D D2

REF.NO.	PART NO.	DESCRIPTION				REMARK
R551	1-208-812-11	METAL CHIP	18K	0.50%	1/10W	
R552	1-208-812-11	METAL CHIP	18K	0.50%	1/10W	
R553	1-249-377-11	CARBON	0.47	5%	1/4W	F
R554	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R555	1-216-687-11	METAL CHIP	33K	0.50%	1/10W	
R556	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R557	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R558	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R559	1-216-662-11	METAL CHIP	,3K	0.50%	1/10W	
R560	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R563	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R564	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R565	1-216-481-11	METAL OXIDE	1.2K	5%	3W	F
R566	1-215-918-00	METAL OXIDE	1.5K	5%	3W	F
R567	1-216-689-11	METAL GLAZE	39K	5%	1/10W	
R568	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R569	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R576	1-249-423-11	CARBON	3.3K	5%	1/4W	F
R577	1-216-115-00	METAL GLAZE	560K	5%	1/10W	
R578	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R579	1-247-893-11	CARBON	390K	5%	1/4W	
R580	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R582	1-214-902-81	METAL	36K	1%	1/2W	
R583	1-216-674-11	METAL CHIP	9.1K	0.50%	1/10W	
R584	1-215-923-00	METAL OXIDE	10K	5%	3W	F
R585	1-202-883-11	SOLID	680K	20%	1/2W	
R586	1-208-812-11	METAL CHIP	18K	0.50%	1/10W	
R587	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R588	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R589	1-215-905-11	METAL OXIDE	10	5%	3W	F
R590	1-216-381-11	METAL OXIDE	0.22	5%	3W	F
R591	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R592	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R593	1-215-437-00	METAL	4.7K	1%	1/4W	
R595	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R597	1-216-393-00	METAL OXIDE	2.2	5%	3W	F
R598	1-215-914-11	METAL OXIDE	330	5%	3W	F
R1552	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1553	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R1554	1-216-079-00	METAL GLAZE	18K	5%	1/10W	
R1556	1-208-803-11	METAL CHIP	7.5K	0.50%	1/10W	
R1557	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R1561	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R1562	1-215-459-00	METAL	39K	1%	1/4W	
R1563	1-249-385-11	CARBON	2.2	5%	1/4W	F
R1564	1-216-376-00	METAL OXIDE	3.9	5%	2W	F
R1565	1-216-392-11	METAL OXIDE	1.8	5%	3W	F
R1566	1-215-913-11	METAL OXIDE	220	5%	3W	F
R1567	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R1570	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R1595	1-216-664-11	METAL CHIP	3.6K	0.50%	1/10W	
R1596	1-216-674-11	METAL CHIP	9.1K	0.50%	1/10W	
R2501	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R2503	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R2505	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R2506	1-208-785-11	METAL CHIP	1.3K	0.50%	1/10W	
R2507	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R2508	1-216-655-11	METAL CHIP	1.5K	0.50%	1/10W	
R2509	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R2510	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R2511	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R2512	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R2513	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R2514	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W	
R2515	1-208-801-11	METAL CHIP	6.2K	0.50%	1/10W	
R2516	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R2517	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R2518	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R2522	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R2523	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R2525	1-216-295-00	CONDCTOR, CHIP				
R2527	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R2528	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R2529	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R2532	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R2533	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R2534	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R2536	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R2537	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R2538	1-216-099-00	METAL GLAZE	120K	5%	1/10W	
R2539	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R2540	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R2545	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R2546	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R2547	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R2549	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R2550	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R3550	1-216-483-11	METAL OXIDE	2.7K	5%	3W	F
R3551	1-216-483-11	METAL OXIDE	2.7K	5%	3W	F
R3552	1-216-439-00	METAL OXIDE	12K	5%	1W	F
R3553	1-220-313-11	METAL GLAZE	100K	5%	1/4W	
R3554	1-220-313-11	METAL GLAZE	100K	5%	1/4W	
R3555	1-220-313-11	METAL GLAZE	100K	5%	1/4W	
R3557	1-216-483-11	METAL OXIDE	2.7K	5%	3W	F

<VARIABLE RESISTOR>

RV501	1-241-763-11	RES, ADJ, CERMET 4.7K

<SWITCH>

S501	1-572-707-11	SWITCH, LEVER
S502	1-572-707-11	SWITCH, LEVER

<SPARK GAP>

SG501	1-519-422-11	GAP, SPARK

<TRANSFORMER>

T501	1-427-835-11	HLT
T502	1-427-762-11	TRANSFORMER, FERRITE (HDT)
T503 ⚠	1-453-150-11	TRANSFORMER ASSY, FLYBACK
T504 ⚠	1-427-776-11	TRANSFORMER, FERRITE (PMT)
T3550	1-426-896-11	TRANSFORMER, FERRITE (DFT)

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*A-1346-265-A D2 BOARD, COMPLETE
****

<CAPACITOR>

C6501	1-163-020-00	CERAMIC CHIP 0.0082MF	10%	50V
C6502	1-163-038-91	CERAMIC CHIP 0.1MF		25V
C6503	1-164-005-11	CERAMIC CHIP 0.47MF		16V
C6504	1-163-038-91	CERAMIC CHIP 0.1MF		25V
C6505	1-163-038-91	CERAMIC CHIP 0.1MF		25V

REF.NO.	PART NO.	DESCRIPTION				REMARK
C6506	1-124-126-00	ELECT	47MF	20%	16V	
C6507	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V	
C6508	1-163-038-91	CERAMIC CHIP	0.1MF		25V	
C6509	1-163-011-11	CERAMIC CHIP	0.0015MF	10%	50V	
C6511	1-163-031-11	CERAMIC CHIP	0.01MF		50V	
C6513	1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V	
C6514	1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V	
C6515	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V	
C6516	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V	
C6517	1-164-222-11	CERAMIC CHIP	0.22MF		25V	
C6518	1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V	
C6519	1-163-037-11	CERAMIC CHIP	0.022MF	10%	25V	
C6520	1-162-568-11	CERAMIC CHIP	0.33MF	10%	16V	
C6521	1-163-031-11	CERAMIC CHIP	0.01MF		50V	
C6522	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V	
C6523	1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V	

<CONNECTOR>

CN6501	1-764-814-11	CONNECTOR, BOARD TO BOARD 15P

<IC>

IC6501	8-759-708-05	IC NJM78L05A
IC6502	8-759-251-48	IC UPD358GR-E1
IC6503	8-752-347-92	IC CXD2018Q
IC6504	8-759-251-48	IC UPD358GR-E1

<CONDCTOR CHIP>

JR6501	1-216-295-00	CONDCTOR, CHIP
JR6506	1-216-295-00	CONDCTOR, CHIP

<COIL>

L6501	1-408-409-00	INDUCTOR	10UH
L6502	1-408-409-00	INDUCTOR	10UH

<TRANSISTOR>

Q6502	8-729-230-49	TRANSISTOR 2SC2712-YG

<RESISTOR>

R6503	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R6504	1-216-025-00	METAL GLAZE	100	5%	1/10W
R6505	1-216-025-00	METAL GLAZE	100	5%	1/10W
R6506	1-216-075-00	METAL GLAZE	12K	5%	1/10W
R6507	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R6508	1-216-025-00	METAL GLAZE	100	5%	1/10W
R6509	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R6510	1-216-109-00	METAL GLAZE	330K	5%	1/10W
R6511	1-216-295-00	CONDCTOR, CHIP			
R6512	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R6513	1-208-789-11	METAL CHIP	2K	0.50%	1/10W
R6514	1-216-663-11	METAL CHIP	3.3K	0.50%	1/10W
R6515	1-216-675-11	METAL CHIP	10K	0.50%	1/10W
R6516	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R6517	1-216-675-11	METAL CHIP	10K	0.50%	1/10W
R6518	1-216-661-11	METAL CHIP	2.7K	0.50%	1/10W
R6519	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W
R6520	1-216-091-00	METAL GLAZE	56K	5%	1/10W
R6521	1-216-656-11	METAL CHIP	1.6K	0.50%	1/10W
R6522	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R6523	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R6524	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R6525	1-216-657-11	METAL CHIP	1.8K	0.50%	1/10W
R6526	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R6527	1-216-025-00	METAL GLAZE	100	5%	1/10W
R6528	1-216-025-00	METAL GLAZE	100	5%	1/10W
R6540	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W

****

*A-1372-067-A H3 BOARD, COMPLETE (KV-W28MN11/MH11)
****

*A-1372-072-A H3 BOARD, COMPLETE (KV-W32MN11/MH11)
****

<CAPACITOR>

C1931	1-124-126-00	ELECT	47MF	20%	16V

<CONNECTOR>

CN1931	*1-564-506-11	PLUG, CONNECTOR 3P

<IC>

IC1931	8-741-790-11	IC SBX1790-11

<RESISTOR>

R1931	1-247-807-31	CARBON	100	5%	1/4W

****

*A-1372-068-A H1 BOARD, COMPLETE (KV-W28MN11/MH11)
****

*A-1372-070-A H1 BOARD, COMPLETE (KV-W32MN11/MH11)
****

<CONNECTOR>

CN1911	*1-564-506-11	PLUG, CONNECTOR 3P
CN1912	*1-564-507-11	PLUG, CONNECTOR 4P
CN1913	*1-564-507-11	PLUG, CONNECTOR 4P

<JACK>

J1911	1-507-806-00	JACK 1P

<RESISTOR>

R1911	1-249-420-11	CARBON	1.8K	5%	1/4W
R1912	1-249-423-11	CARBON	3.3K	5%	1/4W
R1913	1-249-425-11	CARBON	4.7K	5%	1/4W
R1914	1-249-428-11	CARBON	8.2K	5%	1/4W
R1915	1-249-409-11	CARBON	220	5%	1/4W
R1916	1-249-409-11	CARBON	220	5%	1/4W
R1917	1-249-409-11	CARBON	220	5%	1/4W
R1918	1-249-409-11	CARBON	220	5%	1/4W
R1919	1-249-418-11	CARBON	1.2K	5%	1/4W

<SWITCH>

S1911	1-571-532-21	SWITCH, TACTIL

REF.NO.	PART NO.	DESCRIPTION	REMARK
S1912	1-571-532-21	SWITCH, TACTIL	
S1913	1-571-532-21	SWITCH, TACTIL	
S1914	1-571-532-21	SWITCH, TACTIL	
S1915	1-571-532-21	SWITCH, TACTIL	

****

*A-1372-069-A H2 BOARD, COMPLETE (KV-W28MN11/MH11)
****

*A-1372-071-A H2 BOARD, COMPLETE (KV-W32MN11/MH11)
****

*4-396-124-01 HOLDER (E), LED

<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
C1921	1-124-126-00	ELECT 47MF 20% 16V	
C1922	1-126-933-11	ELECT 100MF 20% 16V	
C1923	1-124-126-00	ELECT 47MF 20% 16V	

<CONNECTOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
CN1921	*1-564-506-11	PLUG, CONNECTOR 3P	
CN1922	*1-564-512-11	PLUG, CONNECTOR 9P	
CN1923	*1-564-506-11	PLUG, CONNECTOR 3P	
CN1924	*1-564-507-11	PLUG, CONNECTOR 4P	
CN1925	*1-564-507-11	PLUG, CONNECTOR 4P	
CN1926	*1-564-506-11	PLUG, CONNECTOR 3P	

<DIODE>

REF.NO.	PART NO.	DESCRIPTION	REMARK
D1921	8-719-920-66	DIODE SLR-54VC12	(KV-W28MN11/MH11)
D1921	8-719-311-89	DIODE SEL1222R-C	(KV-W32MN11/MH11)
D1922	8-719-920-66	DIODE SLR-54VC12	(KV-W28MN11/MH11)
D1922	8-719-311-89	DIODE SEL1222R-C	(KV-W32MN11/MH11)
D1923	8-719-920-66	DIODE SLR-54VC12	(KV-W28MN11/MH11)
D1923	8-719-311-89	DIODE SEL1222R-C	(KV-W32MN11/MH11)
D1924	8-719-908-03	DIODE GP08D	(KV-W28MN11/MH11)

<FERRITE BEAD>

REF.NO.	PART NO.	DESCRIPTION	REMARK
FB1901	1-410-397-21	FERRITE BEAD INDUCTOR 1.1UH	
FB1902	1-410-397-21	FERRITE BEAD INDUCTOR 1.1UH	
FB1903	1-410-397-21	FERRITE BEAD INDUCTOR 1.1UH	
FB1904	1-410-397-21	FERRITE BEAD INDUCTOR 1.1UH	
FB1905	1-410-397-21	FERRITE BEAD INDUCTOR 1.1UH	
FB1906	1-410-397-21	FERRITE BEAD INDUCTOR 1.1UH	
FB1907	1-410-397-21	FERRITE BEAD INDUCTOR 1.1UH	

<TRANSISTOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
Q1921	8-729-620-05	TRANSISTOR 2SC2603TP-EF	
Q1922	8-729-900-80	TRANSISTOR DTC114ES	
Q1923	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q1924	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q1925	8-729-119-78	TRANSISTOR 2SC2785-HFE	

<RESISTOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
R1921	1-249-413-11	CARBON 470 5% 1/4W	
R1922	1-249-414-11	CARBON 560 5% 1/4W	
R1923	1-249-415-11	CARBON 680 5% 1/4W	
R1924	1-249-416-11	CARBON 820 5% 1/4W	
R1925	1-249-417-11	CARBON 1K 5% 1/4W	
R1926	1-249-425-11	CARBON 4.7K 5% 1/4W	
R1927	1-249-417-11	CARBON 1K 5% 1/4W	
R1928	1-249-437-11	CARBON 47K 5% 1/4W	
R1929	1-249-433-11	CARBON 22K 5% 1/4W	
R1930	1-249-433-11	CARBON 22K 5% 1/4W	
R1932	1-249-887-11	CARBON 33 5% 1/4W	F
R1933	1-247-895-00	CARBON 470K 5% 1/4W	

<RELAY>

REF.NO.	PART NO.	DESCRIPTION	REMARK
RY1901	1-515-833-11	RELAY	

<SWITCH>

REF.NO.	PART NO.	DESCRIPTION	REMARK
S1921	1-571-532-21	SWITCH, TACTIL	
S1922	1-571-532-21	SWITCH, TACTIL	
S1923	1-571-532-21	SWITCH, TACTIL	
S1924	1-571-532-21	SWITCH, TACTIL	
S1925	1-571-532-21	SWITCH, TACTIL	

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*A-1372-073-A H4 BOARD, COMPLETE (KV-W32MN11/MH11)
****

*A-1372-075-A H4 BOARD, COMPLETE (KV-W28MN11/MH11)
****

<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
C1941	1-126-933-11	ELECT 100MF 20% 16V	
C1942	1-101-004-00	CERAMIC 0.01MF 50V	
C1943	1-126-933-11	ELECT 100MF 20% 16V	
C1944	1-124-903-11	ELECT 1MF 20% 50V	
C1945	1-124-903-11	ELECT 1MF 20% 50V	

<CONNECTOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
CN1941	*1-564-513-11	PLUG, CONNECTOR 10P	

<DIODE>

REF.NO.	PART NO.	DESCRIPTION	REMARK
D1941	8-719-121-24	DIODE RD9.1ES-L	
D1942	8-719-121-24	DIODE RD9.1ES-L	
D1943	8-719-121-24	DIODE RD9.1ES-L	
D1944	8-719-121-24	DIODE RD9.1ES-L	
D1945	8-719-121-24	DIODE RD9.1ES-L	

<JACK>

REF.NO.	PART NO.	DESCRIPTION	REMARK
J1941	1-764-142-11	TERMINAL BLOCK, S 3P	

<TRANSISTOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
Q1941	8-729-119-78	TRANSISTOR 2SC2785-HFE	

<RESISTOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
R1941	1-247-804-11	CARBON 75 5% 1/4W	
R1942	1-249-422-11	CARBON 2.7K 5% 1/4W	
R1943	1-247-804-11	CARBON 75 5% 1/4W	
R1944	1-247-883-00	CARBON 150K 5% 1/4W	
R1946	1-247-883-00	CARBON 150K 5% 1/4W	
R1948	1-249-429-11	CARBON 10K 5% 1/4W	

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REF.NO.	PART NO.	DESCRIPTION				REMARK
	*A-1380-478-A	K BOARD, COMPLETE (KV-W32MN11/MH11)				
		*****************				
	*A-1380-480-A	K BOARD, COMPLETE (KV-W28MN11/MH11)				
		*****************				
	4-382-854-11	SCREW (M3X10), P, SW (+)				
		<CAPACITOR>				
C3201	1-126-964-11	ELECT	10MF	20%	50V	
C3202	1-126-964-11	ELECT	10MF	20%	50V	
C3203	1-124-126-00	ELECT	47MF	20%	16V	
C3204	1-124-126-00	ELECT	47MF	20%	16V	
C3205	1-126-953-11	ELECT	2200MF	20%	35V	
C3206	1-136-165-00	FILM	0.1MF	5%	50V	
C3207	1-126-953-11	ELECT	2200MF	20%	35V	
C3208	1-136-165-00	FILM	0.1MF	5%	50V	
C3210	1-136-165-00	FILM	0.1MF	5%	50V	
C3211	1-136-165-00	FILM	0.1MF	5%	50V	
C3214	1-124-903-11	ELECT	1MF	20%	50V	
		<CONNECTOR>				
CN3201	*1-564-508-11	PLUG, CONNECTOR 5P				
CN3202	*1-564-507-11	PLUG, CONNECTOR 4P				
CN3203	*1-564-509-11	PLUG, CONNECTOR 6P				
		<DIODE>				
D3201	8-719-109-84	DIODE RD5.1ESB1				
		<IC>				
IC3201	8-759-190-89	IC TDA7265				
		<TRANSISTOR>				
Q3201	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q3202	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q3203	8-729-119-78	TRANSISTOR 2SC2785-HFE				(KV-W28MN11/MH11)
		<RESISTOR>				
R3201	1-249-430-11	CARBON	12K	5%	1/4W	
R3202	1-249-421-11	CARBON	2.2K	5%	1/4W	
R3203	1-249-414-11	CARBON	560	5%	1/4W	
R3204	1-249-432-11	CARBON	18K	5%	1/4W	
R3205	1-249-414-11	CARBON	560	5%	1/4W	
R3206	1-249-432-11	CARBON	18K	5%	1/4W	
R3207	1-249-430-11	CARBON	12K	5%	1/4W	
R3208	1-249-421-11	CARBON	2.2K	5%	1/4W	
R3209	1-216-357-00	METAL OXIDE	4.7	5%	1W	F
R3210	1-216-357-00	METAL OXIDE	4.7	5%	1W	F
R3211	1-249-426-11	CARBON	5.6K	5%	1/4W	
R3212	1-249-429-11	CARBON	10K	5%	1/4W	
R3214	1-249-426-11	CARBON	5.6K	5%	1/4W	
R3219	1-249-423-11	CARBON	3.3K	5%	1/4W	
R3220	1-249-433-11	CARBON	22K	5%	1/4W	
R3222	1-249-417-11	CARBON	1K	5%	1/4W	
R3223	1-249-437-11	CARBON	47K	5%	1/4W	
R3224	1-249-441-11	CARBON	100K	5%	1/4W	

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REF.NO.	PART NO.	DESCRIPTION				REMARK
	*A-1388-176-A	J BOARD, COMPLETE				
		*****************				
		<CAPACITOR>				
C430	1-124-126-00	ELECT	47MF	20%	16V	
C431	1-124-126-00	ELECT	47MF	20%	16V	
C432	1-124-126-00	ELECT	47MF	20%	16V	
C433	1-163-031-11	CERAMIC CHIP	0.01MF		50V	
C434	1-163-031-11	CERAMIC CHIP	0.01MF		50V	
C455	1-164-005-11	CERAMIC CHIP	0.47MF		25V	
C456	1-163-257-11	CERAMIC CHIP	180PF	5%	50V	
C457	1-164-005-11	CERAMIC CHIP	0.47MF		25V	
C458	1-124-126-00	ELECT	47MF	20%	16V	
C459	1-163-257-11	CERAMIC CHIP	180PF	5%	50V	
C460	1-163-031-11	CERAMIC CHIP	0.01MF		50V	
C901	1-126-103-11	ELECT	470MF	20%	16V	
C902	1-124-903-11	ELECT	1MF	20%	50V	
C903	1-124-903-11	ELECT	1MF	20%	50V	
C904	1-124-903-11	ELECT	1MF	20%	50V	
C905	1-124-903-11	ELECT	1MF	20%	50V	
C906	1-124-903-11	ELECT	1MF	20%	50V	
C907	1-101-004-00	CERAMIC	0.01MF		50V	
C908	1-126-933-11	ELECT	100MF	20%	16V	
C909	1-126-933-11	ELECT	100MF	20%	16V	
C910	1-124-126-00	ELECT	47MF	20%	16V	
C911	1-124-126-00	ELECT	47MF	20%	16V	
C912	1-164-005-11	CERAMIC CHIP	0.47MF		25V	
C913	1-163-031-11	CERAMIC CHIP	0.01MF		50V	
C914	1-124-126-00	ELECT	47MF	20%	16V	
C915	1-163-031-11	CERAMIC CHIP	0.01MF		50V	
C916	1-101-004-00	CERAMIC	0.01MF		50V	
C917	1-124-903-11	ELECT	1MF	20%	50V	
C918	1-124-903-11	ELECT	1MF	20%	50V	
C919	1-124-903-11	ELECT	1MF	20%	50V	
C920	1-124-903-11	ELECT	1MF	20%	50V	
C921	1-126-233-11	ELECT	22MF	20%	50V	
C922	1-126-233-11	ELECT	22MF	20%	50V	
C923	1-163-031-11	CERAMIC CHIP	0.01MF		50V	
C924	1-101-004-00	CERAMIC	0.01MF		50V	
C925	1-126-233-11	ELECT	22MF	20%	50V	
C926	1-163-031-11	CERAMIC CHIP	0.01MF		50V	
C927	1-126-233-11	ELECT	22MF	20%	50V	
C928	1-124-126-00	ELECT	47MF	20%	16V	
C929	1-124-126-00	ELECT	47MF	20%	16V	
C930	1-164-005-11	CERAMIC CHIP	0.47MF		25V	
C931	1-126-103-11	ELECT	470MF	20%	16V	
C932	1-124-126-00	ELECT	47MF	20%	16V	
C933	1-164-005-11	CERAMIC CHIP	0.47MF		25V	
C935	1-126-103-11	ELECT	470MF	20%	16V	
C936	1-163-243-11	CERAMIC CHIP	47PF	5%	50V	
C937	1-126-933-11	ELECT	100MF	20%	16V	
C938	1-124-126-00	ELECT	47MF	20%	16V	
		<CONNECTOR>				
CN901	1-695-301-11	CONNECTOR, BOARD TO BOARD 40P				
CN902	*1-564-525-11	PLUG, CONNECTOR 10P				
CN903	1-564-517-11	PLUG, CONNECTOR 2P				
		<DIODE>				
D901	8-719-121-24	DIODE RD9.1ES-L				

J

REF.NO.	PART NO.	DESCRIPTION	REMARK
D902	8-719-121-24	DIODE RD9.1ES-L	
D903	8-719-121-24	DIODE RD9.1ES-L	
D904	8-719-121-24	DIODE RD9.1ES-L	
D905	8-719-121-24	DIODE RD9.1ES-L	
D906	8-719-121-24	DIODE RD9.1ES-L	
D907	8-719-121-24	DIODE RD9.1ES-L	
D908	8-719-121-24	DIODE RD9.1ES-L	
D909	8-719-121-24	DIODE RD9.1ES-L	
D910	8-719-121-24	DIODE RD9.1ES-L	
D911	8-719-121-24	DIODE RD9.1ES-L	
D912	8-719-121-24	DIODE RD9.1ES-L	
D915	8-719-121-24	DIODE RD9.1ES-L	
D916	8-719-121-24	DIODE RD9.1ES-L	
D917	8-719-121-24	DIODE RD9.1ES-L	
D919	8-719-121-24	DIODE RD9.1ES-L	
D920	8-719-121-24	DIODE RD9.1ES-L	
D921	8-719-121-24	DIODE RD9.1ES-L	
D922	8-719-121-24	DIODE RD9.1ES-L	
D923	8-719-121-24	DIODE RD9.1ES-L	
D924	8-719-121-24	DIODE RD9.1ES-L	
D927	8-719-121-24	DIODE RD9.1ES-L	
D930	8-719-121-24	DIODE RD9.1ES-L	
D931	8-719-800-76	DIODE 1SS226	
		<IC>	
IC460	8-759-100-96	IC UPC4558G2	
IC901	8-752-068-46	IC CXA1855S	
		<JACK>	
J901	1-573-967-11	BLOCK, (S) TERMINAL	
J902	1-573-968-11	BLOCK, (S) TERMINAL	
		<COIL>	
L902	1-412-537-31	INDUCTOR 100UH	
		<TRANSISTOR>	
Q420	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q421	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q422	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q423	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q424	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q425	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q901	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q902	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q903	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q905	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q906	8-729-216-22	TRANSISTOR 2SA1162-G	
Q907	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q908	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q909	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q910	8-729-216-22	TRANSISTOR 2SA1162-G	
Q911	8-729-216-22	TRANSISTOR 2SA1162-G	
Q912	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q914	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q915	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q916	8-729-900-53	TRANSISTOR DTC114EK	
Q917	8-729-900-53	TRANSISTOR DTC114EK	
Q918	8-729-216-22	TRANSISTOR 2SA1162-G	

REF.NO.	PART NO.	DESCRIPTION				REMARK
		<RESISTOR>				
R430	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R431	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R432	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R433	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R434	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R435	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R436	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R437	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R438	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R439	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R440	1-216-023-00	METAL GLAZE	82	5%	1/10W	
R441	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R442	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R444	1-216-689-11	METAL GLAZE	39K	5%	1/10W	
R448	1-216-689-11	METAL GLAZE	39K	5%	1/10W	
R449	1-216-689-11	METAL GLAZE	39K	5%	1/10W	
R450	1-216-689-11	METAL GLAZE	39K	5%	1/10W	
R451	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R452	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R453	1-216-022-00	METAL GLAZE	75	5%	1/10W	
R454	1-216-022-00	METAL GLAZE	75	5%	1/10W	
R901	1-216-021-00	METAL GLAZE	68	5%	1/10W	
R902	1-216-021-00	METAL GLAZE	68	5%	1/10W	
R903	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R904	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R905	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R906	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R907	1-216-689-11	METAL GLAZE	39K	5%	1/10W	
R908	1-216-689-11	METAL GLAZE	39K	5%	1/10W	
R909	1-216-022-00	METAL GLAZE	75	5%	1/10W	
R910	1-216-022-00	METAL GLAZE	75	5%	1/10W	
R911	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R912	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R913	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R914	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R915	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R916	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R917	1-216-022-00	METAL GLAZE	75	5%	1/10W	
R918	1-216-022-00	METAL GLAZE	75	5%	1/10W	
R919	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R920	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R921	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R922	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R923	1-216-101-00	METAL GLAZE	150K	5%	1/10W	
R924	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R925	1-216-101-00	METAL GLAZE	150K	5%	1/10W	
R926	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R927	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R928	1-216-022-00	METAL GLAZE	75	5%	1/10W	
R929	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R930	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R931	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R932	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R933	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R934	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R936	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R937	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R938	1-216-101-00	METAL GLAZE	150K	5%	1/10W	
R939	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R940	1-216-101-00	METAL GLAZE	150K	5%	1/10W	
R941	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R942	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	

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SONY®

SERVICE MANUAL

AG-1 CHASSIS

MODEL	COMMANDER	DEST.	CHASSIS NO.
KV-W28MH11	RM-850	HK	SCC-H23B-A
KV-W28MN11	RM-850	GE	SCC-H22A-A
KV-W32MH11	RM-850	HK	SCC-H23A-A
KV-W32MN11	RM-850	GE	SCC-H22B-A
KV-W32MH11	RM-850	WB	SCC-H24A-A

CORRECTION-1

☛ : Corrected partion

File this correction with the Service manul.

SECTION 2 DISASSEMBLY

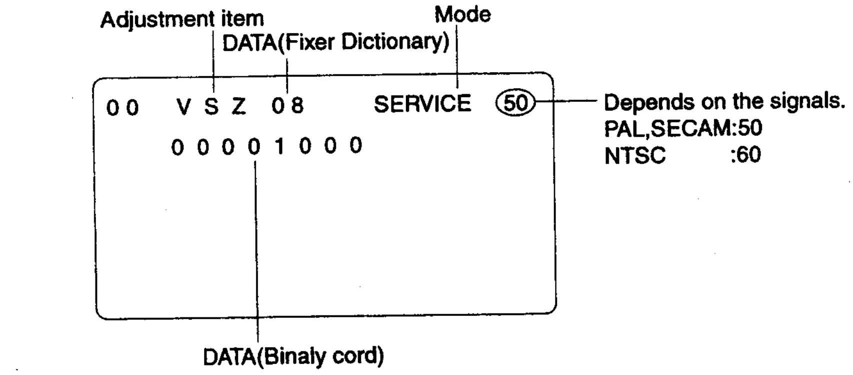
2-8.EXTENSION CABLE AND BOARD(See page17)

DESCRIPTION	PART No.
Extension Board 40pin	1-589-554-11

SECTION 4 CIRCUIT ADJUSTMENTS

4-1.ADJUSTMENTS WITH COMMANDER(See page26)

The screen Display



Adjustment item
Mode
DATA(Fixer Dictionary)
00 VSZ 08 SERVICE ㊿
00001000
Depends on the signals.
PAL,SECAM:50
NTSC :60
DATA(Binaly cord)

*Input data are different according to model.

Model \ Item	7	6	5	4	3	2	1	0
KV-W28MH11	0	0	0	1	0	0	0	1
KV-W28MN11	0	0	0	1	0	0	0	1
KV-W32MH11	0	0	0	0	0	0	0	1
KV-W32MN11	0	0	0	0	0	0	0	1

※ Please file according to model size. .... ■

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SECTION 4 CIRCUIT ADJUSTMENTS

4-2.ADJUSTMENT METHOD(See page27)

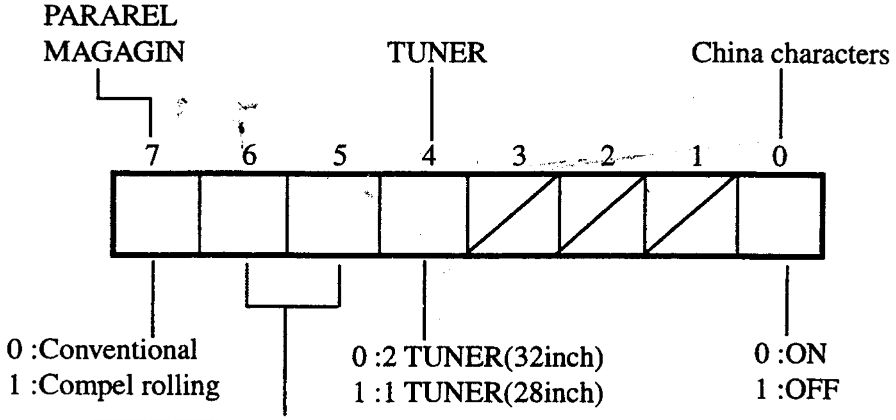
Service data Note

1.Data renge area: 00-09,0A-0F,10-19,1A-1F,20-29,2A-2F,30-39,3A-3F.

2.Standard data : Those are the standard data values written on the microprocessor. There for the data values of the modes are respectively stored in the memory.
In case of a device replacement,adjustment by rewriting the data value is necessary for some items afterwards.

OP 0 :Set the option to item.(each bit=1 option)

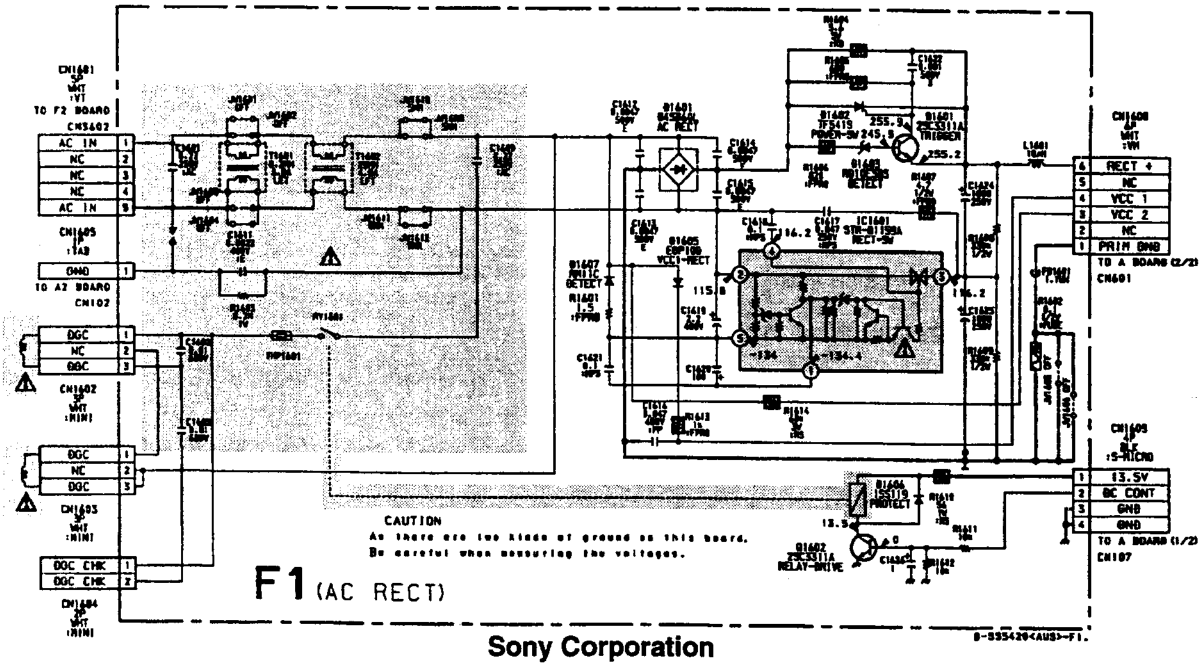
OP 1 :Input data are different according to model.


PARAREL
MAGAGIN
TUNER
China characters
7
6
5
4
3
2
1
0
0 :Conventional
1 :Compel rolling
0 :2 TUNER(32inch)
1 :1 TUNER(28inch)
0 :ON
1 :OFF

	6	5
Teletext Ver. 1	0	0
2	0	1
3	1	0

SECTION 5 DIAGRAM

5-3.PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS(See page56)F1 Board.


CN1601
TO F2 BOARD
CN5402
AC IN
NC
NC
NC
AC IN
CN1605
TO A2 BOARD
CN102
GND
DGC
NC
DGC
CN1602
DGC
NC
DGC
CN1603
DGC CHK
DGC CHK
CN1604
CAUTION
As there are two kinds of ground on this board.
Be careful when measuring the voltages.
F1 (AC RECT)
RECT +
NC
VCC 1
VCC 2
NC
PRIM GND
TO A BOARD (2/2)
CN601
13.5V
BC CONT
GND
GND
TO A BOARD (1/2)
CN107
D1601 AC RECT
IC1601 STR-81159A RECT-SW
Q1601 TRIGGER
Q1602 RELAY-DRIVE
D1604 PROTECT
RY1601
8-935420<AUS>-F1.

Sony Corporation
Consumer A&V Products Company
TV & Display Products Div.

6379

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**The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.**

REF.NO.	PART NO.	DESCRIPTION	REMARK
R943	1-216-022-00	METAL GLAZE 75 5% 1/10W	
R945	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R946	1-216-093-00	METAL GLAZE 68K 5% 1/10W	
R947	1-216-067-00	METAL GLAZE 5.6K 5% 1/10W	
R949	1-216-295-00	CONDCTOR, CHIP	
R950	1-216-067-00	METAL GLAZE 5.6K 5% 1/10W	
R951	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R952	1-208-785-11	METAL CHIP 1.3K 0.50% 1/10W	
R953	1-216-184-00	METAL GLAZE 270 5% 1/8W	
R955	1-216-295-00	CONDCTOR, CHIP	
R956	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
R962	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
R963	1-216-022-00	METAL GLAZE 75 5% 1/10W	
R964	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R965	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R966	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R968	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
R969	1-216-022-00	METAL GLAZE 75 5% 1/10W	
R972	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R973	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R976	1-216-021-00	METAL GLAZE 68 5% 1/10W	
R977	1-216-113-00	METAL GLAZE 470K 5% 1/10W	
R979	1-216-113-00	METAL GLAZE 470K 5% 1/10W	
R980	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R982	1-216-113-00	METAL GLAZE 470K 5% 1/10W	
R983	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R985	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
R986	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R987	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R988	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R989	1-216-174-00	METAL GLAZE 100 5% 1/8W	
R990	1-216-176-11	METAL GLAZE 120 5% 1/8W	
R991	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R992	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R993	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R994	1-216-083-00	METAL GLAZE 27K 5% 1/10W	

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MISCELLANEOUS

REF.NO.	PART NO.	DESCRIPTION	REMARK
	⚠1-409-951-11	COIL, DEMAGNETIZATION (KV-W28MN11/MH11)	
	⚠1-409-952-11	COIL, DEMAGNETIZATION (KV-W28MN11/MH11)	
	⚠1-409-953-11	COIL, DEMAGNETIZATION (KV-W32MN11/MH11)	
	⚠1-409-954-11	COIL, DEMAGNETIZATION (KV-W32MN11/MH11)	
	⚠1-452-616-11	NECK ASSY, PICTURE TUBE (NA323)	
	1-452-724-11	COIL, NA ROTATION (RT-165)	
	1-504-121-51	SPEAKER (5CM)	
	1-504-771-11	SPEAKER (12CM)	
	⚠1-540-006-12	CAP ASSY, HIGH-VOLTAGE	
	1-543-653-11	CORE ASSY, BEAD(DIVISION TYPE)	
	*1-555-110-00	CABLE, P-P (KV-W32MN11/MH11)	
	*1-558-539-21	CABLE, P-P (KV-W28MN11/MH11)	
	1-563-204-11	SOCKET, ANTENNA (PAL/SECAM) (KV-W28MN11/MH11)	
	1-569-008-11	ADAPTER, CONVERSION 2P	
	1-900-071-31	CONNECTOR ASSY (KV-W28MN11/MH11)	
	1-900-138-08	CONNECTOR ASSY (KV-W32MN11/MH11)	
	⚠8-451-449-11	DY Y28CIC2(MTY) (KV-W28MN11/MH11)	
	⚠8-451-460-11	DY Y32CIC2M (KV-W32MN11/MH11)	
	⚠8-735-023-05	PICTURE TUBE 32CI1 (W76KXS010X) (KV-W32MN11/MH11)	
	⚠8-737-756-05	PICTURE TUBE 28CI1 (W66LCA010X) (KV-W28MN11/MH11)	

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ACCESSORIES AND PACKING MATERIALS

REF.NO.	PART NO.	DESCRIPTION	REMARK
	3-759-695-11	MANUAL, INSTRUCTION	
	*4-032-113-01	REINFORSEMENT (KV-W32MN11/MH11)	
	*4-045-489-01	INDIVIDUAL CARTON (KV-W28MN11/MH11)	
	*4-045-792-01	INDIVIDUAL CARTON (KV-W32MN11/MH11)	
	*4-045-490-01	CUSHION (UPPER) (ASSY)(KV-W28MN11/MH11)	
	*4-045-491-01	CUSHION (LOWER) (ASSY)(KV-W28MN11/MH11)	
	*4-045-782-01	CUSHION (UPPER) (ASSY)(KV-W32MN11/MH11)	
	*4-045-783-01	CUSHION (LOWER) (ASSY)(KV-W32MN11/MH11)	
	*4-045-784-01	BOARD, TOP (KV-W32MN11/MH11)	
	*4-046-746-01	TRAY (KV-W28MN11/MH11)	
	*4-046-791-01	TRAY (KV-W32MN11/MH11)	
	*4-388-954-01	BAG, PROTECTION	
	*4-396-077-01	JOINT	

REMOTE COMMANDER

REF.NO.	PART NO.	DESCRIPTION	REMARK
	1-467-983-11	REMOTE COMMANDER (RM-850)	
	9-905-614-01	COVER, POCKET (FOR RM-850)	

ADAPTOR, CHANGE

REF.NO.	PART NO.	DESCRIPTION	REMARK
	1-466-779-11	ADAPTOR, CHANGE (KV-W28MN11/W32MN11)	
	1-466-780-11	ADAPTOR, CHANGE (KV-W28MN11/W32MN11)	
	1-569-008-11	ADAPTOR, CHANGE (KV-W28MH11/W32MH11)	